



UNIVERSIDADE NOVA DE LISBOA

Self-Evaluation Report

EUROPEAN UNIVERSITY ASSOCIATION
INSTITUTIONAL EVALUATION

January 2009

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List of acronyms

- AL – Associate Laboratory (*Laboratório Associado*)
- AU – Academic Unit (*Unidade Académica*)
- ECDU – Teaching Staff Career Statute (*Estatuto da Carreira Docente Universitária*)
- ECTS – European Credit Transfer System (*Sistema Europeu de Acumulação e Transferência de Créditos*)
- ENSP – National School of Public Health (*Escola Nacional de Saúde Pública*)
- FCM – Faculty of Medical Sciences (*Faculdade de Ciências Médicas*)
- FCSH – Faculty of Social Sciences and Humanities (*Faculdade de Ciências Sociais e Humanas*)
- FCT – Faculty of Sciences and Technology (*Faculdade de Ciências e Tecnologia*)
- FD – Faculty of Law (*Faculdade de Direito*)
- FE – Faculty of Economics/School of Economics and Management (*Faculdade de Economia*)
- FCCN – Foundation for National Scientific Computation (*Fundação para a Computação Científica Nacional*)
- FFCT – Foundation of the Faculty of Sciences and Technology (*Fundação da Faculdade de Ciências e Tecnologia*)
- FP – Framework Programme (*Programa Quadro*)
- FuCT – Foundation for Science and Technology (*Fundação para a Ciência e a Tecnologia*)
- GAPI – Office for the Support and Promotion of Industrial Property (*Gabinete de Apoio à Promoção da Propriedade Industrial*)
- HEI – Higher Education Institution (*Instituição de Ensino Superior*)
- IBET – Institute of Experimental and Technological Biology (*Instituto de Biologia Experimental e Tecnológica*)
- ICT – Information and Communication Technologies (*Tecnologias da Informação e Comunicação*)
- IHMT – Institute of Hygiene and Tropical Medicine (*Instituto de Higiene e Medicina Tropical*)
- ISEGI – Institute of Statistics and Information Management (*Instituto Superior de Estatística e Gestão de Informação*)
- ITQB – Institute of Chemical and Biological Technology (*Instituto de Tecnologia Química e Biológica*)
- MCTES – Ministry of Science, Technology and Higher Education (*Ministério da Ciência, Tecnologia e Ensino Superior*)
- RSO – Research Support Office (*Gabinete de Apoio à Investigação*)
- SAS – Students Support Services (*Serviços de Acção Social*)
- SEG – Self-Evaluation Group (*Grupo de Auto-avaliação*)
- SIADAP – Integrated System for Performance Evaluation of Public Administration (*Sistema Integrado de Avaliação do Desempenho da Administração Pública*)
- UNINOVA – Institute for the Development of New Technologies (*Instituto de Desenvolvimento de Novas Tecnologias*)
- UNL (NOVA) – *Universidade Nova de Lisboa*

Statement

I, António Bensabat Rendas, Rector of Universidade Nova de Lisboa, declare that I followed the self-evaluation process and read this self-evaluation report. On behalf of the university, I accept the responsibility for both.



Foreword

In January 2007, a new Rector was elected with a programme based on seven principles: internationalization and excellence in teaching and research, implementation of a new managerial and governance model, preparation of the strategic plan with a wide participation of all the university bodies, development of a new management culture based on rigour in order to promote quality, reshaping of the relations between the Rectorate and the Academic Units (AUs) allowing for a shared decision-making process, and finally, the promotion of quality of life of the students including welfare support.

The initial evaluation of the university at that time made by the Rectoral team and the Deans of the AUs identified one major drawback that could seriously obstruct the implementation of these objectives: the lack of technological infrastructures and of a comprehensive information management system to allow for the flow of data from the AUs to the Rectorate and vice-versa.

The application of the Bologna process to all the educational programmes of the university, which had begun in 2006, was also considered a demanding task for UNL, lasting until the end of the current academic year.

Moreover, in September 2007, following the OECD evaluation of Tertiary Education in Portugal, a new Law for Higher Education was published, which defined, amongst other factors, a new governance model for the universities, based on new statutes.

In the Autumn of 2007, all Portuguese HEIs started the process of producing their statutes which took considerable time and effort particularly since it was done without additional financial support from the Government at a time of considerable economical constraints and uncertainty in the sector and globally.

In the case of UNL, the elected Statutory Assembly started to meet in December 2007 and the statutes were officially approved in August 2008 (Annex 0.1). This assembly included five external members from a total of twenty one. The new central governing bodies took office in November 2008 and are now fully operational. In October 2008, the same statutory process began in all the AUs with a predictable deadline until December 2008, extendable until the end of February 2009.

The new legal framework will give UNL more autonomy to set its own governing policies, under the supervision of the new General Council, a governing body particularly relevant because it includes, for the first time, external members who will be extremely important for the accountability of UNL. Amongst other duties, this Council elects the Rector, approves the medium-term strategic plan, and supervises the annual activity plan together with the annual accounts. For all these reasons, it was decided to postpone the elaboration of NOVA's strategic plan until the new governing bodies were in office.

This information is essential for an in-depth understanding of the present situation occurring in Portuguese HEIs and for explaining how NOVA is expecting to take advantage of this EUA evaluation to launch the **strategic planning** process and the **quality assurance** procedures. These issues will be dealt with in the first semester of 2009 with a wide participation of all the university bodies and with the support of external experts. However, we believe that the SWOT exercise performed by the Statutory Assembly (Annex 0.2) and the reflection performed during the self-evaluation process, as described below, will considerably help in this enterprise.

Introduction

Analysis of the self-evaluation process

The Self-Evaluation Group (SEG), set up at central level, was appointed by the Rector in September 2008 and was composed by 18 members: two Vice-Rectors, one Pro-Rector (who coordinated the group and was also the liaison person with EUA), the coordinators of the Quality and the Planning Offices, one representative of the non-academic staff, one representative of each AU (nine in total appointed by their own units) and three students, two undergraduate and one PhD student (Annex 0.3).

This group met on a weekly basis between September and December, according to a schedule previously agreed.

The elaboration of the Introduction and of Sections I and II of the self-evaluation report obeyed to the following methodology: 1 – a draft of each section was written by a small group from the SEG; 2 - discussion of the proposed text by the whole group; 3 – introduction of the suggested changes; 4 – validation of the final version by the SEG.

Section III was based on the reports from the three working groups set up in April 2008 to prepare the quality project of UNL in three domains: organisation and management; teaching and learning; research (see Section III for a detailed description). Section IV was written after the other Sections were approved and reflects a content analysis of the whole text. This analysis chose as reference the same categories of the SWOT exercise performed by the Statutory Assembly. Section V was mainly based on the work of the working group on research. In these sections, the same validation process as described above was applied.

The Rector followed the work of both the SEG and of the three working groups. The final report profited from his comments.

A proposal of the final version was sent for comments to the Deans and to the Presidents of the Students' Unions of the AUs and feedback was received. Corrections and suggestions were integrated by the SEG and the report was sent to the EUA in the beginning of January 2009.

In what concerns the positive aspects of the self-evaluation exercise, there was a general feeling of satisfaction with the opportunity of discussing evaluation and quality issues in UNL as well as of consolidating a reflexion group on these matters. Time constraints for a wider discussion, as well as the difficulty to involve and integrate all the AUs with the same degree of motivation can be pointed out as negative aspects of the process. One of the reasons for such drawback was the fact that all the AUs have now been applying the new legal regulations and producing new statutes within the framework of NOVA's statutes.

Institutional context

Historical Overview

The 1960s were years of rapid change in Portugal. It was a time of modernization, mostly in the economy and in society, which created the background for the downfall of the long-lasting dictatorship following the 1974 revolution.

Despite some attempts, the former authoritarian regime had been unable to modernize itself politically. However, responding to the new economic and social demands, an educational reform was launched in 1973 that encompassed the entire system, from pre-elementary school to higher education. Somewhat in contradiction with the political evolution, this reform represented an effort to cope with a serious educational backwardness, by expanding and modernizing the system.

It was in this context that three new universities were created, among them the Universidade Nova de Lisboa, founded in August 11, 1973. The initial plan contemplated an interdisciplinary and integrated organizational design, very much in line with the Anglo-Saxon model of departmental structure. Facilities should be concentrated in a single campus, and Caparica, across the river Tagus, was the chosen location. After the complicated period of turmoil, which followed the 1974 revolution, the university authorities accepted in 1977 the fragmentation of UNL by the Ministry of Education into different schools ("Faculdades").

This was a decisive moment in UNL's history, which affected its future existence. On the one hand, the organizational model changed from the Anglo-Saxon to the continental one and UNL lost its originality,

becoming similar to the existing Portuguese classical universities, two of which were already established in Lisbon (Universidade de Lisboa and Universidade Técnica de Lisboa). On the other hand, from then on, the geographical dispersion came to be irreversible, up to a certain point. The change in the organizational model and the geographical dispersion accounted for some of the difficulties in inter-institutional cooperation within UNL, which are still currently felt.

In 1977 four “Faculdades” were created: Ciências e Tecnologia (Sciences and Technology), the only one that kept to the original plan and chose to stay in the Caparica Campus, municipality of Almada; Ciências Sociais e Humanas (Social Sciences and Humanities), installed since the beginning in Lisbon; Economia (Economics and Management) that first opened in Campo Grande and later moved to the Campolide Campus (both in Lisbon), and Ciências Médicas (Medical Sciences), also situated in the capital. The Instituto de Higiene e Medicina Tropical (Institute of Hygiene and Tropical Medicine), founded in 1902 and located in Lisbon as well, was integrated into the UNL in 1980.

In 1989, the university continued to expand with the creation of the Instituto de Estatística e Gestão de Informação (Institute of Statistics and Information Management) in the Campolide Campus. Four years later, the Centro de Tecnologia Química e Biológica (Centre of Chemical and Biological Technology), founded in 1989, became a new academic unit of UNL - the Instituto de Tecnologia Química e Biológica (Institute of Chemical and Biological Technology) - in the municipality of Oeiras. The Escola Nacional de Saúde Pública (National School of Public Health), founded in 1966 and located in Lisbon, became part of the UNL in 1994. Finally, the Faculdade de Direito (Faculty of Law) opened in Campolide in 1996. For details on the locations, please refer to the map with all the AUs (Annex 0.4).

In 2001, new statutes were approved which allowed for a broader representation of the different stakeholders with emphasis on the students and external members. However, the latter had no interference on the governance of the university. These statutes also allowed for the establishment of similar governing bodies in all the AUs but did not include any guidelines for strategic planning or quality assurance.

Geographical position

As a result of the historical evolution, the university facilities were spread throughout three municipalities (Almada, Oeiras and Lisbon) across several locations with two main campuses, one in Campolide, where in 2002 the new Rectorate building and the students’ residence were inaugurated, and the largest one in Caparica (see Annex 0.4).

In the context of the profound rearrangements to be carried out at the Campolide Campus, currently being negotiated with the Lisbon Local Authority, Faculdade de Ciências Sociais e Humanas (FCSH), presently situated not far from Campolide and facing serious infrastructures constraints, is expected to move to this campus, although there is not yet any definite commitment regarding the date. This concentration would be a major breakthrough for UNL, reinforcing the trend for its geographic distribution to cluster around two campuses (Caparica and Campolide), leaving out only four AUs: three devoted to Medicine, Tropical Medicine and Public Health spread around Lisbon (Faculdade de Ciências Médicas - FCM, Instituto de Higiene e Medicina Tropical – IHMT, and Escola Nacional de Saúde Pública - ENSP), and Instituto de Tecnologia Química e Biológica (ITQB), in Oeiras. Moving FCSH to the Campolide Campus would also be an important contribution for its development, increasing the concentration of students, teaching and research staff from diverse scientific fields and creating a unique campus in the Lisbon area clustering Economics and Management (Faculdade de Economia, FE), Law (Faculdade de Direito, FD), Statistics and Information Management (Instituto Superior de Estatística e Gestão de Informação, ISEGI), and Social Sciences and Humanities.

On the other side of the river Tagus, the Engineering, Science and Technology Caparica Campus (Faculdade de Ciências e Tecnologia, FCT) provides modern teaching and research facilities, spread throughout twenty buildings with a total occupied area of 42 ha. The most recent building is a very well equipped library, which stands out for its architectural quality and functionality. Additionally, the following facilities exist in the campus: students’ residence, sports fields, nursery, first aid station, bank agency, travel agency, convenience store, canteen, and snack bar. Students are provided with all the required conditions for a successful learning experience, where a culture of a cordial relationship between students and teachers exists. The access to the campus is made through a broad public transport network, including joint services (bus, train, boat) and a tram with a terminal station “Universidade” that is located near one of FCT entrances.

It is an important advantage for NOVA to be located in the Great Lisbon Area, near the political centre, the main public administration offices, and the head offices of the most important private companies and foundations. The proximity of two other major public universities is both a challenge to increase UNL’s performance and a stimulus for a closer cooperation.

Current regional and national labour-market situation

Recent governmental studies show that university graduates have the lowest unemployment rate amongst the Portuguese active population. Moreover, PhD holders are amongst the groups with the highest employment rate. However, PhDs involved in research do not have, in most cases, access to stable positions, sometimes for a decade after obtaining their degree and continue to depend upon post-doc scholarships since contracts with industry are scarce and universities do not have research positions to hire them. In 2008, according to recent data from the Instituto Nacional de Estatística (Statistics Portugal) the number of university graduates employed was 6% higher than in 2007. The degrees with the highest level of unemployment were Teacher Training, Management and Behavioural Social Sciences, whereas the opposite occurred in Medicine, among others. These patterns appear to be more evident in the North of Portugal and in the Lisbon area. These data should be viewed with caution because they were obtained from employment centres.

There are no studies produced at central level by UNL tracking the careers of its graduates. However, there have been some attempts of targeted curricular planning in areas where graduate unemployment was identified, as occurred in some FCSH programmes. A similar planned approach also occurred in FE but for different reasons, mainly to track the successful employment rate of their graduates including MBAs, through their alumni association.

Academic Units (Faculties, Institutes, and School)

NOVA is composed of nine AUs, whose facilities were built in different periods (Annex 0.5), ranging from the XIX century, as is the case of FCM and FE, to the very recent Rectorate, only six years old and awarded, in 2002, the architectural prize of the city of Lisbon (Prémio Valmor). The most homogeneous campus is Caparica, where FCT is located, with buildings ranging between 29 and 2 years old. The AU with the poorest premises is FCSH and the plans to install it in the Campolide Campus will solve the problem. The plans to expand FCM, involving considerable increase in laboratory space and a medical library were funded last year by the Government whereas those for FD and ISEGI are waiting for financial approval. However, the biggest problem is the heavy cost of maintenance and restoration of the buildings, including those related with safety rules, which cannot be supported by the university's own revenues, already being used to pay staff salaries. The present needs for basic maintenance are estimated in 6 million €.

Staff (2007-2008)

Academic

	Individuals	FTE (Full Time Equivalent)
Full Professor	116	103
Associate Professor	192	176
Assistant Professor	643	544
Assistant	480	276
Lecturer, Monitor	34	17,5

Non-Academic

743

Students (2007-2008)

1 st cycle Students	11 239
2 nd cycle Students	2602
3 rd cycle Students (Doctoral programmes)	299
Specialization programmes	288
1 st cycle Students (dissertation)	282
2 nd cycle Students (dissertation)	1031
3 rd cycle Students (dissertation)	919
TOTAL students	16 660

The number of students increased around 1000 between 2003 and 2008, mostly between 2005/2006 and 2006/2007 reflecting both the number of students from the pre-Bologna period preparing second and third cycle dissertations and an increase in the attendance of specialization courses. Presently, there are still more than 900 students under the pre-Bologna regime preparing for final third cycle dissertations. This overlap creates an additional burden for the academic staff. It is expected that all the programmes will comply with the Bologna model in 2009.

The ratio of enrolled students (those attending formal courses)/academic staff (FTE) varies widely between AUs, due to their specificities, but remained stable during the last five years, with mean values ranging between 12.9 and 13.3.

The policies related with staff and student management will be discussed in Section II, taking into account the data from the document NOVA in NUMBERS presenting the figures for the five year period ranging from 2003 to 2008 (Annex 0.6).

Autonomy

Human resources

The new statutes will increase NOVA's autonomy in the management of human resources, namely in the capacity to regularly evaluate the merit of academic staff. It is expected that the revision of Estatuto da Carreira Docente Universitária - ECDU (Teaching Staff Career Statute), currently occurring, will recognise rules of promotion based on teaching and scientific merit and that it will also increase flexibility in the recruitment of candidates external to the institution, including foreigners, thus avoiding endogamy.

However, the universities also depend upon new national laws to evaluate the performance of civil servants, which have been implemented in the last two years. These laws apply to the non-academic staff of the universities. As for the academic staff, it is currently being negotiated that they will be evaluated under the framework of the Agência de Avaliação e Acreditação para a Garantia da Qualidade do Ensino Superior (Quality Agency for Higher Education) still under organisation, but expected to play a major role in institutional and courses evaluation.

Financial resources

NOVA's total budget in 2007 included the State Funding for current expenditure (OE - 68.038.714,00 €), the Own Revenues and other sources of funding (64.029.232,00 €), and the Investment Plan for Central Administration Development Expenses (PIDDAC - 2.227.888,00 €).

The State current funding is calculated through a formula mainly based on the number of students, with different capitation for different areas of study. Other criteria have been included, such as academic staff qualifications, with a much lower weight, though introducing some uncertainty in the sum allotted by the State each year. A supplementary state funding for current expenditures is supplied by the Ministry of Science, Technology and Higher Education (MCTES) to the three units that do not receive first cycle students (IHMT, ITQB, and ENSP). This sum has been given for a few years as an historical part of the budget, but the university is not consulted on the amount, which represents a small percentage of the total financial needs.

The budget allocated for running costs in 2007 had the following distribution:

- State Funding (OE)	68.038.714 €	(51.5%)
- Own Revenues		
Tuition fees	13.809.989 €	(10.4%)
Sales of Services and Goods	11.110.284 €	(8.4%)
Other revenues and balance from 2006	12.835.679 €	(9.7%)
- European Union research funding	11.879.919 €	(9.0%)
- Other sources		
National Research funding	11.604.552 €	(8.8%)
Other revenues and balance from 2006	2.315.552 €	(1.8%)
- Funding from other sectors	473.256 €	(0.4%)

Annually the State current funding does not contemplate additional expenses due to career progression (2%) and salaries increase negotiated by the Government with the Trade Unions (2.5% in 2008). On top of

that, in the last two years a further drawback occurred: in 2007, the universities were imposed a contribution of 7.5% of the salaries for a retirement fund and in 2008 this contribution increased to 11%. All these additional expenses have been supported by the surplus balances, which will be exhausted in the next year. This situation seriously undermines the university's financial autonomy that has lost an important financial buffer that allowed, in previous years, new strategic projects and investments.

Academic profile

NOVA is autonomous in setting its own teaching profile taking into account the rules of the Bologna Process. The educational offer is also related with the student's applications, a factor dependent on the *numerus clausus* defined by the MCTES in negotiation with the universities. A study performed in 2006 by CIPES, a Portuguese research centre in higher education, showed that NOVA was the third HEI concerning first choices in the first round of enrolment. Seventy percent of the students come from districts centred in the Lisbon area (Lisbon, Setúbal, and Santarém) which makes UNL a regional university, as are all the Portuguese universities. This regional recruitment further raises the competition amongst Lisbon based universities. It is also an opportunity for developing joint teaching and research activities, which is already occurring. At the national level, there is a need to optimise the study programmes offer, since there are considerable duplications and overlapping.

In what concerns research, there is a very large degree of autonomy of the AUs, based on their priorities and on the guidelines of the funding agencies. NOVA has also autonomy to sign research contracts with different private and public institutions. In the case of research activities, there are multiple links with other groups both national and international. However, these links need to be improved within UNL.

There is a culture of innovation in both teaching and research, since the foundation of NOVA. Innovation in the study programmes offered was a feature that distinguished NOVA since the beginning. Computer Sciences (1976), Environmental Engineering (1978), Communication Sciences (1979), Master of Business Administration (1980), Musicology (1980) or Physics and Materials Engineering (1981) are only but a few examples of subjects that UNL offered for the first time in Portugal at Higher Education level.

Recently, this innovative approach has been reflected in the development of an entrepreneurship culture cutting across the AUs.

Section I - Norms and values

1.1 Mission and goals

The statutes establish NOVA's goals as being a research-oriented university, with an excellent teaching, increasingly focused on second and third cycles, but based on solid first cycles, internationally competitive, with a special focus on interdisciplinarity across fields. Integration of different scientific cultures aiming at increased and innovative inter-institutional synergies are also important targets for UNL.

1.2 Governance and management

UNL's governance was characterised under the previous statutes (2001) by a high degree of decentralisation and a corresponding weakness of the main governing bodies of the university, the Rector and the Senate's Permanent Commission. The current absence of a strategic plan is a sign of the low level of coordination prevailing within the university. The difficulty of adopting initiatives involving different AUs testifies their level of autonomy and again a considerable lack of institutional articulation.

Though respecting autonomy as an institutional principle, the mandate of the present Rector has been characterised by an effort to strengthen the confidence between the Rectorate and the different AUs, to increase their coordination role and to launch common initiatives. In order to achieve these purposes an informal management board was created in February 2007, including the Rector, the Vice-Rectors and the Deans, meeting on a monthly basis, which became the Board of Deans under the new statutes.

The new UNL statutes, which are effective since August 2008, comply with the law passed by the parliament in September 2007, but also reflect the coordination effort that has been taking place within the university in the last two years. They aim at preserving a decentralised governance model, coupling it with shared strategic planning and management. Accordingly, the administrative and financial autonomy of the AUs is mentioned in art. 22, nº1 of the university's statutes, while their scientific and pedagogic autonomy will be regulated by their own new statutes, which have to be approved by the Rector.

Under the new statutes, the Rector, as coordinator and manager of the institutional policies, was given important functions regarding the government of the whole university. Namely, he has the initiative in strategic planning, the importance of which must be reemphasized since the lack of planning has been a major drawback in UNL's management.

The General Council, presided by a personality external to the University, is an independent governing body, responsible for the election of the Rector. It will play a decisive role in the supervision of the strategic management of the university by approving the Rector's proposals on such matters (Statutes art. 6). The presence of the external stakeholders in this council is a significant innovation of the new regulatory framework, widening the horizons of the relations between university and society, and reinforcing the independence of this body regarding the various interest groups within the university.

The new statutes also involve students in institutional governance, both in the General Council and in the AUs councils. At university level, there is also a Student's Council, which acts as an advisory board for students' issues.

For strategic issues and also in some decisions affecting the management of the AUs (Statutes art. 14), the Rector has the obligation to consult the Board of Deans before addressing the General Council.

The Board of Deans will also be the main institutional arena for coordinating the relationship between the Rectors' Cabinet and the AUs (Annex 1.1 shows a diagram of the general governance and management at UNL).

It is yet impossible to predict the overall outcome of these new regulations. However, the new statutes have the potential to preserve the autonomy of the AUs, though fostering a stronger cooperation. Strategic planning will also create a general framework able to give coherence to their action and allowing for more inter-institutional activity, thus endeavouring to turn autonomy into a strategic asset.

Staff

UNL is a public university and, although autonomous, depends on national policies. As such, the selection, appointment, and promotion of academic staff follow the national ECDU, passed in 1979. Its provisions, combined with severe budgetary constraints, and long established practices create serious obstacles to the very existence of an academic staff management policy. There is a large consensus among the academic community in Portugal on the urgent need of a new ECDU, which is currently under preparation by the MCTES.

In September 2007, and interpreting the law passed by Parliament on HEI (nº 62 of September 2007), the Senate's Permanent Commission decided not to automatically appoint former Assistants as Assistant Professors after they were awarded a PhD, as obligatory by the ECDU. This was a controversial decision but nevertheless was considered a significant step towards a new academic staff management policy at UNL. Other previous decisions towards this new approach occur at FE where there is an established policy of recruiting each year in the international job market PhD's for tenure track academic positions. However, the recruitment of foreign Professors for tenure track positions is very rare.

The appointment and promotion of administrative also follow national rules, but these have been recently changed. Careers were simplified; career progression and salary increases became dependent on evaluation, which can also lead to dismissal and staff development programmes were given an increased role.

NOVA does not have an autonomous gender policy, but there is statistical evidence of a clear gender asymmetry unfavourable to women, regarding ruling posts and amidst senior academic staff.

The statutes (art. 28) define that "UNL shall promote observance for the principle of equality; encourage quality and innovation and the recognition of initiative and dedication; use merit [...], as the basis for establishing remuneration and career progression and implement individual responsibility in the performance of the established objectives".

1.3 Academic profile

For the last two years, the university has been deeply engaged in the reform of its study programmes according to the Bologna process, which will have to be completed at the end of the current academic year. The outcome of this reform will be commented in Section, but it can be said that it maintained the existing diversity and some duplication of teaching programmes, which can be partially explained by the heterogeneity of the AUs. The geographic dispersion of the university and the "independence" of the AUs,

which are at the origin of their different institutional cultures, also account for the above-mentioned diversity and duplication and the difficulty of increasing the inter-institutional level of cooperation within the university.

Despite these drawbacks, the application of the Bologna process offered UNL the opportunity to reflect on the content of its educational programmes and stimulated a process of modernisation of its pedagogical approaches, focusing on active learning and on learner-based methods, which is slowly developing with different paces in the AUs.

E-learning has been a strategic concern of UNL's governing bodies for some years. With the main infrastructure based on ISEGI, a specific mission group was assigned the task of disseminating this technology throughout the university and of giving support to the initiatives coming from the different AUs. Nevertheless, there is a need for articulation of the different e-learning activities across the university.

It has been NOVA's policy to leave to its schools and research centres the definition of their own research priorities. The assessments performed by Fundação para a Ciência e a Tecnologia (FuCT), the Portuguese Research Council, identified several units of excellence, both disciplinary and interdisciplinary, which have emerged and consolidated across UNL during the last decade. It is now a priority to identify and promote cross-cutting research agendas that may enhance collaborative research (see Section V).

In what concerns the relationship between teaching and research, one can expect its promotion in the first cycle, with the integration of students in research teams, supported by a newly launched programme of the FuCT. This initiative will allow for a more general application of innovative pedagogical approaches such as project work and small group tutorials. The link between teaching and research is a well-established practice in second cycle programmes across the university and it is by definition the basis of all third cycle programmes, which actively engage students in research centres.

Presently, there are different institutional profiles concerning the balance between teaching, research, and services, ranging from a major research institute, such as ITQB, to the two larger schools (FCT and FCSH) equally committed to teaching and research and where consultancy services play also an important role. In the health area (FCM, IHMT and ENSP), there is a considerable overlapping between the clinical activity and the academic role, which are frequently performed simultaneously.

1.4 Academically-related activities

The university has multiple relationships with society through its AUs and there are multidisciplinary areas of intervention that are emerging, such as entrepreneurship (see Section V).

UNL has developed important partnerships with local governments and other external partners (industry and private foundations) within the three municipalities of the Great Lisbon area (Lisbon, Almada, and Oeiras) where it is located, but at a wider national level as well. These partnerships include applied research and technical support for local governments in diverse areas such as urban and regional planning, specific legal support, social and cultural policies, environmental policies and studies, security, historic heritage and education (for example promoting the public understanding of science, namely aimed at secondary school students).

UNL also provides consultancy and technical advice to the Portuguese State in several organizational issues, e.g., related to the National Health Service structure and functioning, national environmental planning and in legal drafting and evaluation. The ENSP is also responsible at national level for the academic training of Public Health specialists.

The new statutes are aligned with the current practices on the matter, since they state that UNL aims at providing quality services to the community, promoting social development and enhancing the qualification of human resources.

UNL participates in national and international policy-oriented research and discussion networks. These include a vast array of social subjects such as migration, gender equality, domestic and gender violence, security and internet use by children, as well as technical/technological areas such as biotechnology, environment, ICT, materials, nanotechnologies, and electronics.

Enhancing the valorisation of research results and technology transfer by patents and spin-offs is a priority at UNL, and the strategy is described in detail in Section V. In brief, it can be stated that the results are already improving, in particular when the evolution of the number of submitted patents in the last three years is analysed (Annex 5.9).

1.5 Funding

In general, it can be stated that universities in Portugal have been increasingly underfunded by the State particularly for running costs, maintenance, and re-equipment. The public funding for universities is at a similar level as it was in 2001.

One of the current ways of increasing own revenues is to attract more post-graduate students, since the MCTES did not establish a limit for tuition fees for the second and third cycles, contrary to what occurs with the first cycle.

As for research, UNL receives funding mainly from FuCT and the European Union on a competitive basis. UNL is the recipient of very few European grants and this need to be evaluated and, if possible, improved (for further details see Section V). Funding from FuCT should also be increased.

Services to the community, especially applied research and consultancy can also increase the university's own resources and need to be encouraged.

Furthermore, the funding of public universities by private sponsors, apart from contract-based funding, is by no means an established practice in Portugal. The same applies to the establishment of endowment chairs, with external sponsorship and also to the engagement in contract research. One can only hope that the new university government bodies, more open to the representation of society, will help to create new opportunities and challenges in this respect.

In order to enhance university's autonomy, one solution for the future would be a contract based on performance, both for teaching and research, agreed with the government for a certain period of time (three to five years). The implementation of the Quality Agency for Higher Education will hopefully contribute to more transparent funding schemes based on performance.

1.6 Balance in terms of local, regional, national, and international positioning

UNL is certainly committed to play a role both at local and regional level as previously mentioned. On the other hand, UNL is a national and comprehensive university strongly committed to compete and collaborate at the international level, both in Europe and in the rest of the World. Indeed, NOVA's main goal is to be a stronger international player as befits one of the leading universities in Portugal.

Since 2005, UNL is one of the three Portuguese universities ranked in the THES – QS World University Rankings. In the 2007 edition, UNL occupied the 341st position relative to the world universities and the 150th position among European universities. Despite being the second Portuguese university, the score of UNL was higher than the score of the first classified Portuguese university in four of the six parameters that contribute to the overall classification, namely: recruiter review, international faculty, international students, and faculty/student. In the 2008 edition, UNL, still the second ranked Portuguese university, dropped to the group of universities positioned between positions 401-500 (world) and to the 181st position relative to Europe. Reasons for this fall are not easy to understand, but the awareness of the importance of establishing routine benchmarking procedures clearly resulted from current discussions on UNL quality assurance policy.

To improve the competitiveness at international level, UNL has to increase the number of international students, not only under the Erasmus Programme, where it is well placed amongst European universities, but also in the recruitment of foreign students to our regular programmes whose number is still small: 920 in 2007/2008, corresponding to 5,4%. The involvement of NOVA's scientists in international projects is also increasing and additionally the recruitment of international research staff is another positive sign of the university internationalisation and should be further promoted. Currently, only 7% of the total UNL faculty staff is non-Portuguese, but in the recently launched programme Ciência 2007, the international recruitment of foreign researchers at post-doctoral level reached 43%.

1.7 Other institutional goals

NOVA also aims at providing relevant services for the community, both nationally and internationally, giving special attention to the countries where Portuguese is spoken, with particularly emphasis towards Brazil and African countries with a strong commitment to promote joint second and third cycle programmes, preferably locally organized. A specific mission group coordinator was appointed for that purpose.

Section II – Organisation and activities

2.1 Management practices

General

The new legal framework with its innovative governance model represents a considerable challenge for the managerial practices at NOVA. Three main changes have occurred: a) the creation of the General Council with external members; b) the disappearance of the Senate; c) the reinforcement of the powers of the Rector and of the Deans through the Board of Deans.

The role of the General Council has already been explained in detail and its main advantages were clarified. Although it is not expected that this council will interfere in current university management, it can certainly supervise the managerial role of the Rector and of the Board of Deans and thus contribute to a strong central leadership without reducing the specific autonomy of the AUs.

The absence of a Senate is certainly an important managerial challenge for the Rector who will have to devise, together with the Rectors' Cabinet strategies to strengthen the cohesion of the university.

The existence of the Board of Deans will favour inter-institutional projects such as common information and quality assurance systems. Common teaching, research and services projects should also have a more favourable ground to develop, based on this closer relationship between central and peripheral decisions makers.

The Rector and the General Council play a central role in defining priorities for the overall budget of the university, although the Board of Deans has to be consulted by the former before he presents any budgetary proposal to the latter. Beyond that the AUs have administrative and financial autonomy (Statutes art. 22, nº1), under the supervision of the Rector and the General Council.

Some of the Rector's powers allow him to become involved in AUs management, for instance by appointing the external members of their councils, by approving the creation or extinction of study programmes, by supervising human resources policy or by adopting the necessary measures to ensure quality of teaching and research. Under this general framework, the AUs are expected to make use of their pedagogic and scientific autonomy.

Staff

Concerning the academic staff, the Rector has the power of "deciding, specifically, with regard to the opening of academic competitions, the appointment and contracting of staff, the appointment of panels for contests and academic juries and the system and regulations for assessing academic staff and students." (Statutes art. 10, nº 1, g). Nonetheless, taking into account the history of autonomy of NOVA's AUs, their decisions on academic staff management have usually been accepted by the Rector. However, the opening of tenure positions is debated by the Board of Deans and decided by the Rector.

As previously mentioned, Portuguese universities have limited capabilities to develop an academic staff management policy. Data analysis show that the percentage of total academics (FTE) holding a PhD, including career and invited staff, has significantly grown between 2003 and 2007, from 64% to 72%. In 2007 this figure was higher than 79% in units where the weight of the invited staff is lower (FCT, FCSH, FD, IHMT and ITQB).

Invited staff (FTE), appointed on a short-term basis, represent slightly more than a quarter of the total teaching staff in 2007, and has shown a trend to decrease since 2005. They are appointed mostly as Assistants (62%) or Assistant Professors (26%).

Portuguese universities have a long-standing tradition of endogenous recruitment and promotion and UNL is no exception. To reduce this persistent characteristic, job openings should be diffused at an international level. Such is the case at FE and more recently in the appointment of the director of ITQB. However, the renewal of staff is difficult due to financial constraints and this is a serious problem affecting the Assistant Professors that have very limited stimuli to maintain their academic performance. There is an urgent need to put in place a staff development policy and evaluation procedures at all career levels.

The fact that most researchers are also teaching staff who are expected to dedicate part of their time to research can be a constraint with regard to R&D. However, this drawback can be minimized by creating educational and institutional academic measures that allow for a better balance between teaching and

research activities. Another possibility already explored is the recruitment of PhD holders based on Ciência 2007 and 2008 programmes.

The distribution among age groups of the academic staff in 2003 when compared with 2006 showed a shift towards the older group and a reduction in the younger group. The percentages were respectively: <40y (32% and 28%), 40-49y (36% and 37%), >49y (32% and 35%).

As already mentioned in Section I, NOVA does not have a specific gender policy. Concerning gender distribution of academic staff the percentage of males ranged between 57% (2003) and 59% (2006) with total values of 1323 in 2003 and 1453 in 2006, respectively. Existing data suggest that despite the fact that women hold the majority of presence on campus for first cycle, as well as for Master and Doctorate Degrees granted, their representation and visibility remain low, namely in the ranks of tenured faculty and in positions of governance including senior administrative positions (Rector, Deans, Vice-Deans, Presidents of Scientific and Pedagogical Councils, Department and Major Unit Heads, Academic Department Chairs). However, the statutes open the possibility of implementing a staff development policy based on equality. The university should be able to develop policies to assure gender equity, e.g., in allocating teaching duties, in scheduling activities, in creating infant and newborn care units, in establishing protocols with kindergarten and primary schools. Examples of some such practices can be found in ITQB and FCT where nurseries are available for the staff's children.

As for the non-academic staff the total numbers declined slightly between 2003 (783) and 2007 (743) due to early retirements and to the financial situation which does not favour new recruitment. The ratio of non-academic/academic decreased for the first time below 50% in 2007/2008 with a value of 47%. This reduction of non-academic staff can be corrected following a different and more flexible pattern under the new legislation, allowing specific work contracts, lasting for a fixed period, renewable, but not permanent. Concerning career the largest group belonged to the administrative group and to technical staff with higher education degrees. However, the numbers of unqualified and auxiliary workers was still high. For more details, see NOVA in NUMBERS (Annex 0.6)

Students

Portuguese public universities are only marginally responsible for the selection of their first cycle students. Their intervention in the process is limited to the establishment of some academic prerequisites for each programme. The selection comprehends all HEIs and is based on national rules taking into account students' marks, which allow them to choose specific programmes within universities. In an effort to attract the best students, some UNL's first cycle programmes have adopted minimum marks above the minimum national threshold. Several AUs organize their own presentations in secondary schools as well as major events in their campus, such as FCT Challenge 2006 and 2007 and ExpoFCT 2007 and 2008, which attracted several thousands of students from secondary schools from all over the country. NOVA has also been disseminating its Courses Catalogue, a detailed description of all the study programmes, through its website, which is accessed daily by a very high number of visitors. The *numerus clausus* increased very little (from 2483 in 2004/2005 to 2575 in 2008/2009) because the MCTES does not allow the opening of more funded vacancies in areas other than Medicine. However, the number of applicants increased significantly during the same period, from 11 472 to 18 197.

The number of first cycle graduates increased significantly in 2006/2007 (2635) when compared with the previous academic year (1873) as an immediate consequence of the application of the Bologna process. At same time, the number of master degrees awarded almost doubled. This data need to be analysed when the Bologna process is fully implemented. In the first cycle, the drop-out rate decreased between 2003/2004 (12.1%) and 2006/2007 (9.9%). This data need to be closely followed.

International Student Mobility

In the context of the Erasmus programme, UNL signed 498 inter-institutional agreements with 273 universities mainly from Germany, Spain, France and Italy. According to the most recent data released by the European Commission, in 2004/2005, among 2199 HEIs, UNL occupied the 47th position in the ranking of sending institutions and the 66th position in that of the receiving ones.

The university has also bilateral agreements for student exchange with non-European countries in North and South America, Africa and Asia.

UNL participates in three Erasmus Mundus programmes through FCT, FCSH, and ISEGI. FCT organizes a Master in Computational Logic, whereas FCSH participates in the Erasmus Mundus Master – Crossways in European Humanities. ISEGI participates in the Master of Science in Geospatial Technologies in

cooperation with the University of Münster - Institute for Geoinformatics (Germany) and the Universitat Jaume I (Spain).

For more detailed information see NOVA in NUMBERS (Annex 0.6).

Research

The promotion of cross-cutting research agendas implies self-evaluation and the discussion of common goals, but this is feasible only if a comprehensive knowledge about research activities (such as input and output indicators) is available. The work of the Research Support Office (RSO), created at the Rectorate in 2007 and coordinated by a Vice-Rector, has been aligned with this objective. In short, its main task has been to gather information concerning research that was formerly dispersed across AUs and that is the basis of a detailed characterization of the university research activities (see Section V for an extensive description). Another challenge is to increase the societal impact of the research produced at UNL by making it more visible both inside the university and to the public.

Entrepreneurship

So far, entrepreneurship activities have been conducted at the units' level, although in some cases with the participation of more than one unit in the same project or contract. In order to promote coordination and to enhance an entrepreneurial culture, a Committee was created at the Rectorate. This Committee is chaired by one Pro-Rector with representatives from all UNL units. Recently, an evaluation was performed on the overall entrepreneurial activities of UNL conducted by a foreign consultant. This report includes a proposal of an action plan in this domain (Annex 2.1).

Inter-institutional cooperation

Although there is no central coordination of inter-institutional cooperation, some activities developed by the AUs play an important role in the impact of UNL at local, regional, and international levels.

At local level, beyond the partnerships with the local governments already mentioned in Section I, which include applied research and technical support provided by the university, two specific initiatives deserve to be mentioned: the involvement of the municipality of Almada in 1995 in the foundation of Madan Park of Science, nearby FCT, with the aim of fostering business innovation and entrepreneurship, technology transfer and spin-offs creation; the collaboration with the municipality of Lisbon, together with Universidade de Lisboa and Universidade Técnica de Lisboa, in the project *Lisbon Erasmus Capital City*.

In what concerns cooperation in research and teaching, the ITQB, two research centres hosted by FCT and another fully integrated at IHMT participate in four Associate Laboratories, "institutions of high scientific-technological merit" with a specific legal status. These laboratories, active in areas such as Chemistry, Life Sciences or Materials Science, involve partnerships with private institutions and the universities of Porto, Minho and Aveiro (see Section V). Some UNL units are partners in national networks of scientific equipment, namely Nuclear Magnetic Resonance and Mass Spectrometry.

Three research units in FCSH are engaged in the European Network of Excellence "Immigration, Integration and Social Cohesion in Europe" (IMISCOE), under the 6th EU Framework Programme.

Regarding third cycle programmes, UNL is involved in one national partnership with Universidade de Lisboa and Universidade Técnica de Lisboa (Sociology) and in other international ones: the MIT/Portugal (Bio-Engineering Systems), the University of Texas at Austin/Portugal (Digital Media), the Carnegie Mellon University/Portugal (Information Technology, Critical Infrastructures, Risk Assessment, Technology, Applied Mathematics, Innovation, and Policy) and is a partner in the EMBL international PhD programme.

FE integrates the CEMS (Community of European Management Schools and International Companies) giving the students the opportunity to attend a Master in International Management which is ranked second in the *Financial Times* index of pre-experience management masters. FE also participates in the Lisbon MBA, with Universidade Católica Portuguesa and the Sloan School of Management of MIT.

FCM has recently developed a new Masters on Mental Health Policies, co-chaired by the WHO Mental Health Division (Geneva HQ), aiming at attracting students mainly from South America, Africa and Asia. It also collaborates in the implementation of new medical schools both at national (Universidade do Algarve) and international (Luanda, Angola) levels. FD is helping in the creation of a law school in Timor and has joint third cycle degrees with HEIs in Angola and Mozambique.

An effort should be done to increase the number of joint second and third cycle programmes both with national and foreign universities, the latter representing a decisive dimension of UNL internationalization.

2.2 Academic profile

In Portugal, the application of the Bologna process began without an adequate preparation and a global orientation, both from the MCTES and the HEIs. Moreover, discussions within the HEIs and in society at large had been poor and excessively concentrated on the duration of degrees. In this context, the Bologna Process has been focused mainly on the curricular reform, although the awareness of the importance of change in the teaching methods has been increasing.

The process in UNL fits in this general picture. After extensive discussions, NOVA adopted the 3+2 years model for the duration of the first and second cycle programmes, with some exceptions related to Integrated Masters (Engineering and Medicine with 5 years) and Law (4+1 years). The third cycle length remained open. Annex 2.2 lists all the first, second and third cycle programmes available at UNL.

Since an extensive evaluation has not been done so far, at a glance one can say that at the first cycle level, the reform consisted mainly in the adequation of the existing programmes. The importance of learning outcomes and of the adequation to the labour market in curricular design were ideas difficult to implement by the academic staff.

To allow for some interdisciplinarity, FCSH made an effort to define a common flexible structure to accommodate, in each programme, the basic course units together with some optional courses and additional credits that can be obtained freely in any other programme offered by UNL.

The modifications introduced in first cycle programmes (29) across the university implied profound changes in the second cycle where the majority of the programmes were newly created. Its total number (93) is perhaps exaggerated, but it corresponds to the attempt of attracting new students and to compete in a very dynamic and open market.

One of the most significant curricular innovations was the introduction of formal course units in almost all the third cycle programmes (28). These programmes started in 2008/2009 and will need a close monitoring.

The process that led to the final official approval of the above mentioned programmes, in these last two years, started with a proposal from the AUs approved by their specific bodies (Pedagogical and Scientific Councils). Such proposal was subsequently analysed at Rectorate by the Bologna Office, coordinated by a Pro-Rector and, when necessary, a dialogue was established with the AUs representatives for clarification and improvements. Once cleared, the programme was submitted to the Senate's Permanent Commission for approval and sent to the Directorate General of Higher Education for legal approval.

Unfortunately, the existing low level of cooperation among the AUs was maintained despite the Bologna reform: no cooperation occurs in the first cycle programmes; only five of the second cycle and two of the Doctorates are formally organised by more than one unit. Current challenges include the identification of intra-institutional synergies that can form the basis of common PhD programmes and research projects at the frontier of established disciplinary boundaries, capable of succeeding at national and international level.

Attempts to change didactic approaches deserve to be mentioned and took place in schools where reforms were introduced earlier and before Bologna. This is the case of the FD, founded in 1996. A shared understanding of the importance of meaningful learning, as well as its relevance for professional practice endorsed, since the beginning, the proposition of a curriculum in Law, which was oriented to promoting independent learning and to the study of open-ended problems. FCM also has a long tradition of teacher training courses and evaluation of teaching and learning practices organised by the Department of Medical Education as well as of problem-based learning in some course units.

In FCSH, where a reform was launched in 2001, already taking into account some of Bologna principles, first cycle programmes included a set of norms establishing a minimum percentage of time to be devoted in each course to activities designed to foster student-centred learning, but they have not been easy to implement.

Another example is independent learning and the use of ICT. The e-learning project of ISEGI (Statistics and Information Management) made it possible to offer the first Master in Portugal in an e-learning mode (MSc and Post Graduate Certificate in Science and Geographic and Information Systems). This experience has recently been extended thanks to a significant funding obtained from EU within the EDULINK programme for a cooperation project with the Universidade de Cabo Verde and the Universidade Católica de Moçambique.

Concerning research training, the Bologna process challenged the institutions to engage students in research activities early in their studies. FD began (2007/2008) to open regularly calls for grants with that purpose, having already several first cycle students engaged in preliminary research activities. Moreover, FuCT opened a call for *Integration into Research Grants* for first cycle students, to stimulate scientific activity and the development of critical thinking skills, creativity, and autonomy.

As for research, beyond the four Associate Laboratories mentioned above, UNL hosts 37 research centres financed by FuCT. In the evaluation conducted by FuCT in 2002, 63% of the research centres were classified as Excellent or Very Good. In addition, research activities also take place at the departmental level of AUs, outside the scope of these centres. The latter depend directly from the FuCT and are autonomous regarding the Scientific Councils of the units that hosting them.

One of the AUs, ITQB, deserves a special mention. It is a research-oriented institution with no teaching at the first level, but contributing to second and third cycles. A strong emphasis has been given since its creation in 1992 to a graduate teaching approach in a multi and inter-disciplinary environment as an Open Institution that hosts researchers from other universities for the development of their research projects.

As far as language policy is concerned, and corresponding to the demand of foreign students, some first cycle course units in English were created at FCSH. The students from FD have to prove their proficiency in English or German before being awarded the first cycle degree in Law. All second cycle courses at FE are taught in English and the same happens in the third cycle at ITQB. These are autonomous initiatives, since there is no general language policy statement.

2.3 Students support services

The mission of UNL's Serviços de Acção Social (Students Welfare Services) is to guarantee that no student is excluded from the university because of financial problems.

SAS provide direct support to students, consisting of scholarships and emergency financial, psychological, and social assistance. In the academic year of 2007/2008, 1467 scholarships were granted, representing around 10% of UNL students.

SAS also run three residences, providing 452 beds. Two are located at the two main campuses (Caparica and Campolide) and the third one near the centre of Lisbon.

SAS are responsible for three canteens where regulated price meals are served to students, with an average of 2000 meals per day. Furthermore, SAS manage sport facilities located at Caparica and promote sport and cultural activities of UNL students. In addition, there is a health/medical support office linked to the National Health Service.

Beyond the need of increasing the number of beds offered, SAS strive to diversify the meals provided to students and to support new cultural and sport activities. To make this possible, a joint policy involving all AUs is essential.

2.4 Funding

The total budget of NOVA was 124.633.359 € in 2003 and 134.295.834 € in 2007. The investment plan funding has been falling throughout this period, representing about 6% of the total budget between 2003 and 2005 and only 2% in 2006 and 2007.

The percentage of the State running funding in the total value has fallen significantly from 60% in 2003 to 50% in 2007 representing a considerable burden in the use of UNL's own revenues and other sources of funding. The amount of own revenues has been around 30% and the tuition fees represented 10% of the total running funds since 2005. The percentage of labour costs in the total running budget varied between 60% and 65%. Current funding is used to support personnel costs and to finance a small part of the running costs.

As previously stated, the university receives a lump sum from the State, based on a capitation formula, which is the central component of the yearly budget. After deducting the estimated current expenditure of the Rectorate and the financing of some general projects (PIDDAC), the allocation of budget to each AU is done following criteria similar to those used in the central formula. Once the breakdown of the budget occurs, it is very difficult to reallocate funds between AUs. However, it is possible to share costs for common services (e.g. access to electronic databases).

Presently, there is no specific percentage of the budget that can be used by the Rector for special initiatives and the financing of new joint projects needs to be negotiated with the AUs. The Rector uses his limited financial reserves to solve specific problems in AUs, to finance the inventory and the register of patrimony or to promote strategic projects like consolidating accounting, long life learning, licensing university property and entrepreneurship, internal quality assurance and financial management. There were occasions when the Rector and the Senate had to decided reallocations of money, generally to solve extreme situations that would jeopardise the reasonable functioning of a unit.

The budget is controlled by each unit and supervised by the MCTES and by the Rector through a central system of financial information and accounting. During the year, the money can be reallocated among items, inside each unit and, if authorised by the MCTES, recorded as additional income in the following exercise. The control of accounts of the university is made unit by unit by the Tribunal de Contas (Court of Auditors).

UNL is not currently able to calculate the full costs of research and teaching activities, although some academic units are improving the ability to identify and calculate all direct and indirect cost of their activities, including projects. The development of a full costing system in UNL will be one of the strategic priorities to be initiated in 2009.

The new statutes will allow for a better rationale in the allocation of funds, based on the strategic plan presented by the Rector, which has to be approved and accompanied by the General Council and the Board of Deans.

Section III – Quality practices

3.1 Implementing a quality assurance system

UNL is aware of the need to define a general quality policy. Accordingly, the new UNL statutes make a special reference to the promotion and application of self-evaluation instruments to assure the quality of its activities (art. 3). It is also clear that the internal quality processes should include both the core dimensions (governance and management, teaching and learning, research, and external affairs and partnerships) and the supporting dimensions (human resources, information systems, infrastructures, utilities, etc.) of the institution/units.

The importance of ENQA *Standards* is fully recognized within UNL as a reference tool for quality. We are also aware that these *Standards* are neither sufficiently part of UNL's institutional culture nor generally reflected in the existing procedures. However, efforts towards the fulfilment of these purposes already exist in NOVA and will be referred to in this section.

Aiming at fostering a quality policy in UNL, a group was created in January 2008 chaired by the Rector and integrated by two Vice-Rectors, one Pro-Rector, the coordinator of the Planning Office, the future coordinator of the Quality Office, the UNL Administrator and the SAS Administrator. The group analyzed and discussed three main documents: ENQA *Standards and Guidelines*, the new legal framework for the evaluation of Portuguese HEI (law of August 2007) and the EUA *Institutional Evaluation Programme Guidelines*.

After several meetings, the group produced draft documents on quality parameters and indicators and on a general quality assurance system for the university. These documents were later discussed during three workshops with representatives from all the AUs. From these meetings emerged the three working groups on organization and management, teaching and learning and research already mentioned in the Introduction of this report.

The working group on organisation and management issues had as main objective the analysis of the current and future practices related to the efficiency of organisation and management of UNL and its units.

The group first analysed several guidelines for quality assurance in Higher Education (e.g. national regulations, ENQA *Standards and Guidelines*, guidelines issued in the UK, France and Ireland) and concluded that Part C of the 2003 *Handbook of Standards for Quality Management in French Education Institutions* could well be a valuable tool for both the implementation and the self-evaluation of good management practices within UNL. Afterwards, the group analysed in detail each of the French standards and good practices and adapted most of them to the new Portuguese regulations on HEI and to the new statutes. This resulted in some general recommendations to be followed with regard to strategic matters and

in various standards, each one with several examples of good practices. In the opinion of the group, these standards and practices should deserve the best attention within the university (Annex 3.1).

The Teaching and Learning working group first dealt with the need to share teaching practices and some of the meetings were dedicated to this objective, mainly by describing the pedagogical strategies and evaluation procedures in practice in each AU (a portfolio with the teaching evaluation tools in use at each institution was elaborated). Aiming at contributing to the elaboration of the AUs self-evaluation reports on teaching, the group also designed a common template to be used, in the near future, in all AUs (Annex 3.2). Finally, the group produced a document with the pre-requisites considered crucial for assuring the quality of teaching and learning, to be integrated in the general quality management system of NOVA (Annex 3.3).

The group on research collected information on the different research evaluation procedures in use in each AU. Moreover, the group discussed and approved research quality parameters relevant to all units (see Section V, Annex 5.7).

The recommendations of the three groups will be taken into account in the setting up of the university quality assurance system in the current year. With this purpose, a Quality Office was established in 2008 at the Rectorate responsible for the planning and coordinating procedures at both central and AUs levels. The Research Support Office (RSO) will be responsible for gathering (on a yearly basis) the information needed for the implementation and monitoring of the internal quality research assessment procedures.

Since the beginning of 2007, a great effort has also been done to develop a high-speed integrated services network connecting the Rectorate and the different AUs among themselves and with national and international university networks through Fundação para a Computação Científica Nacional (FCCN). This basic infrastructure, which has improved the flow of information, has been recently installed with success and created the possibility of offering new services such as high quality videoconference.

Attention has also been focused on the information systems, which are not similar within the university and have different development levels in the AUs. Considering the diversity of the software applications used by the AUs to handle information on students, staff and management and the difficulties felt until recently to adopt common applications, solutions have been developed to consolidate data produced by such different sources. The regular publication of the university Courses Catalogue on UNL website is a good and successful example of these solutions. However, the general policy followed until now should be reconsidered and an effort should be done to stimulate a progressive convergence towards a common information system.

It is generally sensed that UNL and its AUs urgently need a special budget to foster the development of quality culture, processes, structures and procedures. This is considered of the utmost importance for the strategic management and decision-making processes at UNL.

3.2 Responsibilities for internal quality

UNL has not defined along the years a quality policy to be shared across the institution and, consequently, each unit has been autonomous with regard to quality policies, responsibilities, processes and procedures.

However, under the new university statutes the Rector has the responsibility to take the necessary measures to assure the quality of teaching and research in the institution and in the AUs. As it was mentioned, the Quality Office has been recently installed at the Rectorate and only a few AUs have set up their corresponding offices. Besides, most of the units do not have a formal quality management system in place. Despite these facts, several internal quality procedures have been implemented, which are either informal or compulsory and legally based, supporting traditional working practices. These practices differ across the units and it is generally felt that adequate quality responsibilities, processes, reporting lines and performance indicators have to be defined with a minimum core of common features.

Specifically with regard to teaching and learning, and according to the existing regulations, each AU has a Pedagogical Council and a Scientific Council that have the responsibility for the quality of new and existing degree programmes. In some AUs, degree programmes have also a Coordinator. Pedagogical problems are usually dealt by the Pedagogical Council and by the individual teachers with intervention of the programme Coordinator if existent. However, these actions are ordinarily carried out in an informal way.

3.3 Internal quality processes

Teaching and learning

At central level, the Bologna process has been the main drive for developing quality assurance of academic programmes. The Bologna Office has been playing an important role in the university as it assures the adequacy of the programmes to the existing legislation and to Bologna principles. It also offers feedback and support to each school, ensuring that each proposal is formally ready to be approved by the appropriate central university bodies in order to be submitted to ministerial approval. It is important to emphasize that so far, the Directorate General for Higher Education has accepted all UNL proposals.

Furthermore, students' performance is regularly recorded in each AU and such information as time to graduation and drop-out rates is collected by the Planning Office of the Rector's Cabinet on a yearly basis. The received data are processed in terms of comparable indicators but no systematic feedback is sent to the AUs. Further steps are therefore crucial. These procedures should integrate a comprehensive system, with clearly defined responsibilities of individuals and bodies and with transparent links in order to allow for decision-making procedures. The newly created Quality Office will play a decisive role in this process.

In what concerns the approval of programmes at each academic unit, although there are no formal quality standards, the general procedure consists of a proposal of programmes by departments and the assessment of their coherence, adequacy and feasibility by the AUs bodies (Scientific Council, Pedagogical Council and Directorate). Some AUs have already developed monitoring and revision processes for the ongoing programmes although this not yet a general practice.

The evaluation of courses by students varies widely among AUs. Mainly questionnaires are used, both on-line and on paper. Furthermore, many teachers use their own evaluation tools to collect students' opinions and improvement suggestions. However, although there are some exceptions, these evaluations are not conducted in a regular standardized manner and the feedback is not systematically used and in many cases not used at all. Other forms of evaluation, such as peer observation, are necessary since there is sufficient evidence that relying only on students' opinions is a limited and sometimes biased methodology to evaluate teaching. Additionally, systematic evaluation of all courses should be introduced, as well as follow-up procedures of course evaluations. Furthermore, it is vital to use fast and appropriate feedback procedures during courses in order to gain insight into on how to improve the learning process. This would require that the tools and the skills to use them should be shared across all AUs.

Up to now, most of the units have not implemented a regular internal self-evaluation process of their academic programmes. In general, the evaluations have been externally-driven, as it was the case with the former CNAVES (National Council for Evaluation of HE) which assessed all undergraduate programmes twice since the mid-90s, under the previous Higher Education Evaluation Framework. In some cases, external evaluation is also performed by professional bodies (e.g., quality of engineering degrees) or by international accreditation bodies. FE is periodically accredited by the European Foundation for Management Development (which administers EQUIS – the European Quality Improvement System), by the Association to Advance Collegiate Schools of Business and, finally, by the Association of MBAs. The recently created Quality Agency for Higher Education when established and operational will carry out the evaluation and accreditation processes of HEIs.

Within the context of national evaluation of undergraduate medical programmes, FCM, together with the other four established medical schools was evaluated in 2002 by a EUA team in areas such as medical education, management, and quality assurance. The process was not subject to follow up procedures, but created a climate of change that allowed for another national study performed by two foreign specialists, which defined a general framework for undergraduate medical education in Portugal.

In 2007, FCT decided to carry out a self-evaluation process, according to guidelines that were issued by a group of FCT teachers. Professors from the University of Southampton and from the Imperial College were invited as external evaluators. These experts produced a report with valuable recommendations for FCT, mainly with regard to quality assurance practices in teaching and learning. The Faculty has already started the review of existing practices and the planning of some changes and/or new practices aimed at improving teaching and learning.

The importance of an Office for Teaching and Learning at AUs level, offering a range of support services either for students and teachers has been underlined. This office (as it already exists in FCM) would contribute to the ongoing improvement of the teaching and learning processes in the university. Some of its

activities could include: induction courses for new staff; development of pedagogical competences; promotion of co-operative teaching strategies; supervision of pedagogic performance; developing new assessment strategies and instruments; support services for students with special learning needs.

Tracking alumni enables UNL to collect information to improve its programmes. This is not yet a systematic approach in the university and only some UNL units have established these procedures. Examples of this practice are found in FE, FCSH, ITQB and it is being implemented at the ENSP. FCT and FE have also established offices to support graduates employability and ISEGI through the Association for the Development of ISEGI (ADISEGI), formed by eleven public and private institutions, promotes and strengthens the relationship between the school and the external community.

Research

All research units recognized by FuCT are periodically assessed (every 3-4 years) by panels of international evaluators organized by scientific area. The amount of research funding received depends on the result of this process. When operational, the Quality Agency for Higher Education will carry out the evaluation of HEIs, including their scientific activity.

In what concerns internal research evaluations within each AU, some conduct their own assessments and use the corresponding results to shape policies and strategies. ITQB and IBET have External Advisory Boards that carried out evaluations (2000, 2004, and 2007). In some units, such as FE and ITQB the researchers are subject to an evaluation system based on the quality of the journals where their research is published and on the impact of the publications on the profession (see Section V for additional details).

Administrative processes

Meetings of the administrative heads of the units and the UNL administrator are regularly held, in order to standardize the administrative procedures within the university.

The degree of development of the different academic information systems is quite heterogeneous across the university. Some have specialized sites that can be accessed at different levels through a password (e.g. CLIP at FCT and ISEGI ONLINE). In what concerns CLIP, the academic staff can fill in all the relevant information related to the curricular units in the site and communicate via e-mail with the students. In turn, the students can find not only the information provided by the professors, but also their personal data and academic records, examination dates and rooms. The site can be used by students to pay academic fees, to submit on-line requests to the Pedagogical Council and to obtain academic documents. The administration of questionnaires to evaluate the student satisfaction with the curricular units, professors and school is also carried out at the site. The President of the Pedagogical Council and the Academic Registry of the unit can also access several levels of the site. The CLIP also controls the punctuality and attendance of administrative and technical staff. Similar systems exist in most AUs with different functionality levels.

Since December 2007, ISEGI's *Services rendered to students and support to the execution of ISEGI courses* have been certified by APCER (Portuguese certification entity) and IQNET (International Certificate Network)

The management of the budget also varies across NOVA. While some units have a centralized management system, others (e.g. FCT) are about to implement on-line applications that will allow a decentralized budget administration and require more empowerment and involvement of the departments.

External audits are conducted every two years by specialized companies in order to assess and certificate the financial management of the university. The outcomes of the audits are internally analyzed and corrective actions are undertaken, both at the Rectorate and at the AUs, according to the suggestions issued by the auditors.

As regards the administrative staff appointment and promotion, the implementation of SIADAP (Integrated System for Performance Evaluation of Public Administration) requires the definition of institutional objectives and their deployment throughout the Institution. As such, the goals to be attained by the administrative staff have to be aligned with the Institution strategic objectives and are defined at the beginning of each year. The career progression of the staff depends on their yearly evaluation, which is performed in accordance with the accomplishment of the pre-defined goals.

Entrepreneurship

The evaluation recently performed by the external consultant clearly recommended specific activities that are necessary to support entrepreneurship at NOVA. Special emphasis should be given to support the

existent inter-institutional committee, to create a students committee and develop an entrepreneurship website (Annex 2.1).

External Affairs

The External Affairs at NOVA are coordinated by a Vice-Rector who is also responsible for Research. The agreements signed in 2007 were all approved by the Senate's Permanent Commission. At national level, agreements for teaching and research activities were signed with the universities of Lisboa, Porto, Algarve, Aveiro and Minho; with the Portuguese Ministry of Defence for hiring premises, with the FCCN for electronic access to data bases (Online Knowledge Library, b-on), with Hospital Pulido Valente for cooperation in teaching, with the company YDreams for constructing facilities at the Caparica Campus and with the company Valormed for interaction with their activities on environmental impact.

Most of the cooperation agreements (see Annex 3.4 for a detailed list) derived from initiatives of specific groups, and the Rectorate encourages this bottom-up approach. In order to evaluate the relevance of existing agreements within NOVA, a letter was sent to all Deans asking for a statement concerning the importance of the interchange and this approach reduced in 20% the number of older agreements, some of them signed in not so recent years.

In the Portuguese speaking countries, agreements were signed with the Universidade Católica de Moçambique and Universidade de Cabo Verde and also with Brazilian universities for student interchange (based on the Santander agreements) and also for staff and research cooperation. The Santander agreements are closely followed on a yearly basis.

Evaluation plays an important role in the Erasmus Programme. The process implies five evaluation stages: final report analysis, desk check, on the spot check, audit to the institution, and audit through the institution. UNL has its Final Report examined annually, as well as its Intermediate and Pre-financial Reports, which have been compulsory conditions to keep offering the Programme to its students, teachers and staff members over the last 20 years. Additionally, all the mentioned beneficiaries have to fill in a questionnaire where they evaluate their mobility and the support from both the sending and the hosting universities. Therefore, UNL is annually evaluated by the Portuguese National Agency (NA) and by the students, teachers and staff members sent and received.

For the other evaluations, the NA chooses the institutions according to selection criteria defined by the European Commission. In 2006, UNL was evaluated through a desk check, where a random sample of students' processes was thoroughly examined. Furthermore, in 2008, the NA was audited which also led UNL to be audited. However, the need for formal internal procedures and the definition of quality indicators for the Erasmus is deeply felt.

Section IV – Strategic management and capacity for change

The Statutory Assembly, which produced the new Statutes, performed a SWOT analysis (see Annex 0.2), based on which the Identity and the Mission of NOVA were defined. This represented a new approach performed not only by representatives of all the AUs, but also by external members.

In the context of the self-evaluation process, the SWOT exercise was not discussed in depth by the AUs but it was presented to the Board of Deans and to the SEG. When reviewing it, after having completed Sections I, II, III and V of the report, the SEG felt that the SWOT analysis did not entirely reflect all the issues raised during the self-evaluation process and did not include some measures and actions introduced in 2008. Thus, a small group emerging from the SEG performed a content analysis of the Self-Evaluation Report, having the statutory SWOT grid as a reference. The result of this analysis, which complements the SWOT exercise was sent to the SEG and is presented below. The measures to overcome the identified weaknesses and threats will be considered in the context of the strategic plan, which will be launched in the current year. The same applies to the enhancement of the strengths and to the exploitation of the opportunities.

Strengths	Weaknesses
A. ACADEMIC DIVERSITY <ul style="list-style-type: none"> • The history of autonomy of NOVA's AUs • UNL as a comprehensive university 	A. ACADEMIC DIVERSITY <ul style="list-style-type: none"> • Weak institutional articulation
B. FUNDING <ul style="list-style-type: none"> • In 2007 the own revenues and other 	B. FUNDING <ul style="list-style-type: none"> • Lack of funding by private sponsors

Strengths	Weaknesses
<p>sources represented 48.5% of the total funding (running expenses). This reflects a moderate growing trend in the last five years</p>	<ul style="list-style-type: none"> • Scarce fund-raising activities • Excessive dependency on public funding for research • Reduced capacity to obtain European funding for research • Difficulties of ensuring sustainable funding for research • Inexistence of a special budget to foster the development of quality culture, processes, structures and procedures
<p>C. RESEARCH</p> <ul style="list-style-type: none"> • NOVA's autonomy to set research priorities and to sign contracts with other institutions • Identification of areas of excellence through the bibliometric study of CWTS (Leiden) and the external evaluations by FuCT • Creation at the Rectorate of the Research Support Office in 2007, which has been actively promoting studies (such as the bibliometric study of NOVA's publications), fostering the collaboration among the AUs; disseminating information within and outside the university • Partnerships (national and international): with local governments, with companies, industry and private foundations; strong involvement of some AUs with municipalities • Growth in number of projects financed by FuCT from 2002 to 2006 and increase in the total funding 	<p>C. RESEARCH</p> <ul style="list-style-type: none"> • Lack of an articulated policy and discussion of common goals • Tension between the desire of promoting strategic decisions at university level and the actual level where such decisions are taken (research centres) • Lack of financial resources to implement such general policies • The fact that most researchers are also teaching staff can be a constraint to research development • Small number of full-time researchers • Despite the growth in the number of third cycle students they still represent a small percentage of the total • Insufficient services provided to researchers (support in obtaining funding, legal counselling) • Low level of research dissemination across AUs and visibility to the general public • NOVA's intellectual property rights regulations have to be clarified
<p>D. INTERNATIONALIZATION</p> <ul style="list-style-type: none"> • High percentage of publications derived from international collaboration 	<p>D. INTERNATIONALIZATION</p> <ul style="list-style-type: none"> • Insufficient cooperation with Portuguese speaking countries
<p>E. TEACHING AND STUDENTS</p> <ul style="list-style-type: none"> • NOVA's autonomy to set its teaching profile • A highly qualified academic staff • The Bologna Reform stimulated a process of didactic approaches modernisation • Attempts of targeted curricular planning in areas where graduate unemployment was identified • Top ranked university in terms of admission (first choice of first cycle students) • Efforts to attract the best students • Diversity of bilateral agreements for students' exchange (Erasmus/Erasmus Mundus) • Good position in the ranking of European sending and receiving institutions of Erasmus students • Trend for post-graduate courses to be taught in English 	<p>E. TEACHING AND STUDENTS</p> <ul style="list-style-type: none"> • Regional origin of NOVA's first cycle students • The Bologna Reform has been focused mainly on the curricular dimension • The way learning outcomes and labour market needs were reflected in curricular design deserves further attention • The Bologna Reform maintained the existing diversity and some overlapping of programmes • Persistence of low level of cooperation among NOVA's AUs in the organization of new programmes at all cycles • Low number of joint second and third cycle programmes both with national and foreign universities • Lack of articulation of the different e-learning activities across the university • Absence of a language policy
<p>F. GOVERNANCE AND MANAGEMENT</p> <ul style="list-style-type: none"> • The new statutes which defined NOVA's mission, as well as a new governance 	<p>F. GOVERNANCE AND MANAGEMENT</p> <ul style="list-style-type: none"> • Lack of a strategic plan • Limitations in the management of the

Strengths	Weaknesses
<p>model, explicitly assigning responsibilities on strategic planning, evaluation and quality assurance</p> <ul style="list-style-type: none"> • Favourable recommendations from external management and financial auditors 	<p>academic staff (e.g. promotions)</p> <ul style="list-style-type: none"> • Endogenous academic staff recruitment • Lack of a gender policy • Undefined balance between teaching, research and services • Lack of an integrated full costing system
<p>H. INTERFACE WITH THE SOCIAL AND PRODUCTIVE SECTOR</p> <ul style="list-style-type: none"> • Creation at the Rectorate of a committee chaired by one Pro-Rector to coordinate and enhance entrepreneurial culture and activities • Development of an entrepreneurship culture cutting across the university • Number of spin-offs and patents originating from research conducted at NOVA 	<p>H. INTERFACE WITH THE SOCIAL AND PRODUCTIVE SECTOR</p> <ul style="list-style-type: none"> • Insufficient connections to the industrial world in the majority of research areas
<p>I. FACILITIES</p> <ul style="list-style-type: none"> • Modern facilities in some AUs (e.g. research and teaching) 	<p>I. FACILITIES</p> <ul style="list-style-type: none"> • Insufficient or inappropriate facilities in some Aus (e.g. cultural, sports, dormitories and canteens)
<p>J. ACADEMICALLY-RELATED ACTIVITIES</p> <ul style="list-style-type: none"> • Broad participation in Ciência Viva (National Agency for Scientific Culture) 	<p>J. ACADEMICALLY-RELATED ACTIVITIES</p> <ul style="list-style-type: none"> • The goals for the relationship with society have to be clarified
<p>L. QUALITY</p> <ul style="list-style-type: none"> • Under the new statutes the Rector was given the responsibility to take the necessary measures to assure the quality of teaching and research in the university and in its AUs • Creation at the Rectorate of a group on quality policy in January 2008 • Creation at the Rectorate of the Research Support Office in 2007 • Creation at the Rectorate of the Quality Office in 2008 • Existence of some internal and external quality procedures both at central and at AUs level, concerning teaching and learning. These procedures cover several dimensions, such as programmes approval and, in some cases, monitoring and revision; collection of data on students performance; course evaluation; external assessment of academic programmes and tracking alumni • Existence of external periodical evaluation of research centres; some AUs also conduct their internal research assessments, including the performance of their researchers • Assessment of NOVA's scientific publications by the CWTS (Leiden) in 2007 • Existence of periodical external audits to assess the financial management of the university and its AUs • Progressive implementation of SIADAP (Integrated System for Performance Evaluation of Public Administration), which 	<p>L. QUALITY</p> <ul style="list-style-type: none"> • Lack of a general quality policy for NOVA and its AUs which should take into account ENQA <i>Standards</i> • Lack of a general quality culture within NOVA • Lack of systematic self-evaluation of teaching and research activities • Lack of a quality assurance structure in the AUs • Lack of a periodical evaluation of academic staff performance • Lack of a general academic staff development policy • Lack of a common information system

Strengths	Weaknesses
<p>includes the evaluation of non-academic staff</p> <ul style="list-style-type: none"> • Development of a high speed integrated services network connecting the Rectorate and the different AUs • Existing expertise within NOVA to consolidate data produced by different information systems 	
<p>M. STUDENT SUPPORT SERVICES</p> <ul style="list-style-type: none"> • The quality of the students' residences 	<p>M. STUDENT SUPPORT SERVICES</p> <ul style="list-style-type: none"> • Inexistence of joint policy involving all AUs in terms of student support services and activities • Insufficient number of residences offered to students • Low level of general cultural and sport initiatives

Opportunities	Threats
<p>ECONOMIC/FINANCIAL</p> <ul style="list-style-type: none"> • Possibility of better resources allocation • Increase social support from external stakeholders <p>POLITICAL</p> <ul style="list-style-type: none"> • New ECDU • New law on administrative staff appointment and promotion which is more flexible than the former one • Institutional links with Portuguese speaking countries (Africa, Brazil) <p>TERRITORIAL</p> <ul style="list-style-type: none"> • To be located in the Great Lisbon Area, near the political centre, the main public administration offices and the head offices of the most important private companies and foundations • Proximity of two other major public universities is both a challenge to increase NOVA's performance and a stimulus for closer cooperation 	<p>ECONOMIC/FINANCIAL</p> <ul style="list-style-type: none"> • Public funding policy • Budgetary constraints <p>POLITICAL</p> <ul style="list-style-type: none"> • Lack of a new ECDU • Limited intervention in the selection of first cycle students <p>TERRITORIAL</p> <ul style="list-style-type: none"> • Regional origin of Portuguese universities' first cycle students

Section V – Special focus: research leadership and management

5.1 Research strategy

5.1.1 Mission and strategic plan

The present goals for the research pursued at the various levels aim at producing internationally recognized research, by maintaining and developing international networks and by diversifying and growing existing sources of funding from national and international sponsors. Other more specific goals include the establishment of cross-faculty collaborations that may enable to profit from the full potential of the AUs with specific objectives, such as the creation of transdisciplinary PhD programmes. One way to go about this might be for UNL centrally planning exploratory seminars about cross-cutting themes (e.g. health, besides the

obvious disciplinary fields, could well mobilize social sciences, history, philosophy, communication science, law, engineering and economics), for researchers to get acquainted and to identify prospects and opportunities for collaborative research. In a way, the meeting recently held at the Rectorate with the researchers hired under the programme *Ciência 2007* across the UNL could be seen as a first step in that direction (Annex 5.1).

5.1.2 Organization of research activities

5.1.2.1 Associate laboratories and research centres

Research activities take place at the levels of departments and Research Centres within AUs. Research goals and policies are defined mainly at these levels, taking into account the guidelines of FuCT, such as the evaluation of research centres and the calls for projects, as well as those of other funding entities, public or private. UNL hosts 41 Research Centres recognized by the FuCT spanning different areas: Humanities & Arts (13 centres), Social Sciences & Juridical Sciences (10), Natural Sciences (8), Exact Sciences (2) and Engineering Sciences & Technologies (8).

Four of these centres (all of which individually rated as EXCELLENT by FuCT) integrate Associate Laboratories (AL), “institutions of high scientific-technological merit, which are recognized as important actors to the national scientific and technological policy”. Three of these ALs result of partnerships with other institutions: ITQB, which associates with the Instituto de Biologia Experimental e Tecnológica (IBET), a private non-profit Institution and with the Instituto Gulbenkian de Ciência (IGC), a private institution; CQFB, a research centre hosted by FCT, integrates the Laboratório Associado de Química Verde – REQUIMTE in collaboration with the Centro de Química of Universidade do Porto; CENIMAT, also hosted by FCT, integrates the AL Instituto de Nanoestruturas, Nanomodelação e Nanofabricação (I3N), together with the Instituto de Polímeros e Compósitos (IPC) of Universidade do Minho and the Unidade de Física de Semicondutores em Camadas, Optoelectrónica e Sistemas Desordenados (FSCOSD) of Universidade de Aveiro. Finally, the Centro de Malária e outras Doenças Tropicais (CMDT) is hosted by IHMT. These ALs are active in a wide range of areas, such as Chemistry, Life Sciences, Materials Science and Infectious Diseases. The status of AL provides these institutions, and their respective universities, with specific funding and regulations to hire researchers. Concomitantly, this status requires their cooperation with the Portuguese Government in the implementation of specific objectives of the national science and technology policies.

UNL has also several research centres that have not been recognized yet by the FuCT: some of them have been created recently while others are undergoing a reorganization process. All data used for the FuCT evaluation of the centres was based on the 2002 exercise. There is currently another evaluation exercise at the final stage and results will be given when fully available. Annex 5.2 includes a brief description of research areas and activities of ALs and research centres.

5.1.2.2 International programmes

FCT and the ALs ITQB and REQUIMTE are involved in the Programme MIT/Portugal Bio-Engineering Systems that aims at developing new world-class education programmes in Portuguese universities for top engineering students from Portugal and around the world. FCSH and FCT are partners in the Programme University of Texas at Austin/Portugal (UT-Austin/Portugal), an interdisciplinary research and advanced training programme in Digital Media, that includes the development of Master and PhD programmes. A third international partnership, Carnegie Mellon University/Portugal (CMU/Portugal) intends to create in our country internationally recognized education and research programmes in information technology, critical infrastructures, risk assessment, technology, applied mathematics, innovation, and policy; the Departments of Mathematics and Informatics of FCT participate in this programme.

5.1.3 Recruitment of research staff

Research staff is mainly formed by the University staff (professors and researchers) and researchers recruited (through public and open calls and subjected to committee evaluations) under the AL contracts and within *Ciência 2007* and *Ciência 2008* programmes of FuCT. Additionally, post-doctoral students and PhD students are recruited by the research centres resorting to fellowships from FuCT (through open national calls with selection committees by scientific area) or other sources. Annex 5.3 (Table 3.1) shows the different categories of staff in the UNL AUs (PhD holders), as well as the post-doctoral students.

Annex 5.3 also shows the evolution of the number of PhDs awarded in the period 2005-2007 and the data for post-graduate population in the same period. The number of PhD degrees increased 17% and this reflects an increasing trend already observed because of a research-oriented policy adopted by the Government in previous years. At the end of 2007, there were 201 post-docs and 1218 PhD students, totalling 1419 research students (17% of whom are foreigners). 45% of PhD and post-doctoral students are funded by FuCT.

Since the beginning of the ALs contracts (2001), 33 Full-time researchers (PhD holders) were appointed at ITQB and CQFB in the context of the respective AL. Furthermore, within the *Ciência 2007* programme, 69 researchers were appointed, of which 30 foreigners originating from 17 different countries; 36% are females, 25% obtained their PhD degree at UNL and 56% at a foreign University. Under *Ciência 2008* programme, an additional number of researchers will be hired. These contracts have reinforced in recent years the research above mentioned research policy.

5.1.4 Science & society and other outreach activities

FCT, FCSH, ITQB, and IHMT participate in the activities related to *Ciência Viva*, the National Agency for Scientific Culture (<http://www.cienciaviva.pt/>). These AUs and FE organize open days for the public, attracting large numbers of visitors.

Other particular initiatives should be mentioned: FCT promotes each year the EXPO day, that aims to bring the reality of the University (Research, Innovation and Technology) closer to the community (<http://www.fct.unl.pt/expofct/>); FCSH organizes, also once a year, the "Researching at FCSH" (2-3 days) to disseminate its research activities among students and the general public; FD organizes twice a month a Permanent Seminar for the Study of State and Law (SPEED) where research results are presented, mainly by PhD students; ISEGI participates and hosts the GIS-Day, an open day for the elementary and secondary schools, integrated in the Geography week sponsored by the National Geographic Society, the Association of American Geographers, the United States Geological Survey and ESRI, among others. ISEGI also organizes, weekly, a seminar on Information Systems for students and for the general public. IHMT collaborates with municipalities and other institutions in public health-care activities focusing a large number of diseases.

5.1.5 Main institutional research strategies

Given the decentralised nature of UNL, strategies are mostly defined, developed and implemented at the AU level, taking into account their intrinsic characteristics.

A brief description of research strategies in each unit is presented in Annex 5.4. The number of joint initiatives between AUs is rather limited. Some cases however have been successfully established, as the joint Master course on Medical Microbiology run between the ITQB, IHMT and FCM, taking place in these institutions in a yearly rotation basis. Long-standing collaboration between researchers from FCT and ITQB/IBET has promoted joint research projects, mainly in the area of Chemical Engineering.

New collaborations have recently been established between ITQB and FCM researchers and this has allowed the integration of some groups of research from FCM in the recently revised programme of the AL ITQB/IBET/IGC, which gained a more biomedical-oriented approach thereby. Given the great potential of the UNL in Health Sciences, other actions need to be addressed and explored in order for the university to take advantage of its full potential and background on this field of Science.

5.1.6 Institutional framework for resource allocation

At FCT, in addition to the programmes described in Annex 5.4.1, a budget of 1.5 million € was allocated to the departments in 2008, based on their scientific productivity and impact and taking into account the results of a bibliometric study of publications in journals indexed in the Web of Science (details in section 5.1.9.2).

Some AUs, such as FE and ISEGI, have a fixed annual budget for participation in conferences, visits to and by foreign scholars and so forth. Moreover, special needs (large and expensive database access) are taken into account by the Directive Council with decisions based on both merit of the request and the faculty member(s) making it.

Other AUs, such as FCSH, have no institutional budget specifically allocated, but special funds may be given to junior researchers within the research AUs, e.g. for travel expenses and books.

At ITQB, research space is allocated to groups by the Direction, taking into account the institutional strategy, the group's needs, and the available space. Researchers are also granted access to equipment and other general resources. This usually has no costs for the researchers, or else costs are limited to consumables. Some general funds, coming from the institute budget, are given to researchers, on a per-capita (PhD holders) or on a competitive basis; the results of the bibliometric study mentioned above were also used for this purpose. Seventy five percent of the bench fees from PhD fellowships are given to the group hosting the PhD student. Finally, individual researchers finance their own research in competitive calls for projects, and the institute charges 20% in overheads. This money can be used for promoting research or simply to keep the infrastructure, depending on the unpredictable status of funding.

At FCM, the Direction manages resource allocation according to researchers' achievements, but increased flexibility is needed.

There is a common practice of charging overheads that is under revision in some AUs. However, there is a need to define a general policy on this issue.

5.1.7 Ethical code of conduct for research activities

FCSH is currently preparing its new statutes that will include an article on this matter. FCT, FCM, ITQB, and IHMT follow international practices concerning ethics in research. Additionally, ITQB has two ombudspersons to handle ethical issues in research and teaching.

5.1.8 Mechanisms for encouraging individual research initiatives

The Santander Totta - UNL prize is a joint initiative of UNL and the bank Santander Totta in place since 2007/2008. It aims at distinguishing research projects led by junior Principal Investigators, which should involve researchers and work done in more than one UNL unit. Selection is made by a Scientific Committee organized at the Rectorate, based on applications submitted after a public call with a different topic every year: Life Sciences in 2007/2008, Social Sciences and Humanities in 2008/2009, Exact Sciences and Engineering in 2009/2010.

FCT has promoted internally (though not in a continuous way) specific funding for some key scientific areas. FCT and ITQB are co-financing researchers recruited within the *Programa Ciência 2007* in order to stimulate and strengthen their research.

During its history, ITQB has used incentives to foster excellence in research, and funds to finance research have been distributed based on productivity. Strategic research has been funded specifically and small inter-institutional (within the AL) research grants have been awarded on a competitive basis. New independent group leaders, hired during the *Programa Ciência 2007*, have been allocated start-up funds to begin their research groups. ITQB has recently established an annual prize for the best PhD thesis presented in the institution.

FCM has some grants to support small research projects in affiliated hospitals when involving academic staff. FCSH awards scholarships to masters and PhD junior first year researchers (*Bolsas Luis Krus*), and partially supports research meetings. FE and FD also award grants or some financial support (acquisition of bibliography, financing scientific meetings) to researchers, of variable amount indexed to past performance and merit of the research project.

5.1.9 Research-specific quality management processes

5.1.9.1 National processes

Research Units are assessed every 3-4 years and are financed at a level that depends on their assessed quality. This evaluation is organized by FuCT with external international panels organized by scientific areas. The assessment outcome for each research unit is expressed in five grades: Excellent, Very Good, Good, Fair, and Poor. Those rated Fair and Poor are excluded from funding. In the latest evaluation, conducted in 2002 (Annex 5.5), the 37 UNL research centres not integrated in ALs were classified as follows: 7 Excellent (19%), 14 Very Good (38%), 13 Good (35%), 3 Fair (8%). No drastic consequences are derived from these evaluations other than the amount of funding received. A recent evaluation of the research centres has taken place during 2007, while ALs are undergoing this evaluation in 2008. However, the classifications obtained were not yet fully released. An update of these results will be presented during this evaluation process.

5.1.9.2 Internal processes

A Research Support Office (RSO) was created at the Rectorate in 2007, depending of the Vice-Rector for Research and International Affairs, with the main objective of assisting research units with the ongoing development and implementation of strategies for research, in pursuit of the objectives established for the University. Its functions include: (i) to promote and conduct studies to support the strategic decisions of UNL in what concerns research; (ii) to promote collaboration between the AUs, aiming to achieve and maintain excellence in research; (iii) to disseminate information concerning calls for projects, grants and prizes; (iv) to organize and update the information supplied by the AUs, namely scientific publications and research projects financed by different sources; (v) to increase the societal impact of the research produced, by making it more visible both inside the University and to the public.

In 2007, the RSO contracted a bibliometric study of UNL publications indexed in Web of Science (WoS) (2000-2006), which was carried out by the Centre for Science and Technology Studies, CWTS (University of Leiden, The Netherlands). The main objective of this study was the identification of strengths, weaknesses,

and areas of excellence, for the fields of knowledge adequately covered by the WoS. The study was done at various levels: the University as a whole, each AU, as well as each department within FCT. It was also conducted transversely by main and specific scientific fields, following the classification adopted in the WoS. Additionally, the results obtained for UNL were benchmarked with 34 selected universities (including 6 of the most important Portuguese universities and 28 European ones). The results were disseminated first among the Scientific Councils of each unit, discussed internally and presented in a workshop to which all PhD holders were invited. A summary of the main conclusions is included in Annex 5.6. The results were already used by FCT and ITQB, as a basis for the internal allocation of the research funds. An update of the study is planned to take place in 2009, including the publications of 2002-2008.

How to assess research in areas not adequately covered by WoS publications is an issue under discussion within the UNL as in many other Universities worldwide. In a near future, quality standards for research output in these areas of knowledge will be implemented.

Early in 2008, and following the 2007 Law of Evaluation of Higher Education Institutions, a process of Internal Quality Assessment was initiated at UNL. A Committee with representatives of all AUs for developing key performance indicators for research was formed and a set of parameters and indicators, relevant to all AUs, were discussed and approved (see Annex 5.7) to be included in the Strategic Plan. The RSO will be responsible for gathering and maintaining the information needed for the implementation and monitoring of the internal quality assessment procedure as far as research is concerned. One of the parameters, the number of publications (WoS and non-WoS) and its behaviour in the last three years, is shown in Annex 5.8.

Some AUs conduct their own internal research evaluations and use results to shape policies and strategies: ITQB and IBET have an External Advisory Board, which has conducted evaluations in 2000, 2004, and just for ITQB in 2007.

The FCT research centres are autonomous in what concerns scientific policy and define their own strategy and priorities; the Research Centres Council, composed by the Coordinators of all research centres and the President of the Scientific Council, meets regularly in order to discuss problems concerning the management of the centres and research policies.

The researchers of FE are evaluated based on the quality of the journals where their research is published and the impact of the publications on the profession, ensuring that their incentives are aligned with the objectives of the school.

As far as FD is concerned, the lack of appropriate bibliometric standards hinders the evaluation, in absolute and comparative terms of their productivity. Efforts are being made to establish such a tool, although this goal can only be achieved at an inter-institutional and international level. FCSH concurs with FD on the lack of adequate bibliometric tools, criteria and indicators and the need to devise them; therefore, no overall quality management processes are in place.

5.2 Services to researchers

5.2.1 Support in obtaining external/internal funding

Most AUs have offices to support researchers. Their mission is mainly informative, since the researchers are responsible for seeking the necessary funding, submission, and progress reporting. Some AUs feel that more proactive Projects Offices, working alongside with researchers in matters beyond project administration are clearly lacking, and are taking measures to correct this situation. The role of the RSO in this context needs to be considered.

5.2.2 Support in start-ups/spin-off activities

FCT participates in three interface institutions related to start-ups/spin-off activities: IBET, UNINOVA and Madan Parque. IBET leases laboratory and office space to start-up companies, many of which resulted of research developed in these two institutions (details in section 5.3.1).

5.2.3 Administrative and accounting services for research teams

All AUs have administrative and accounting services that provide services for research teams after the approval of the projects (financial recording, payments to service providers, and the production of the financial execution reports). In some circumstances, specialized offices, dedicated to delimited activities are created. An example of the latter is the case of the MIT/Portugal and UT Austin/Portugal initiatives at FCT.

5.2.4 Legal counselling on contractual issues

Although most AUs are able to provide some legal counselling upon request of the researchers, there is the feeling that this support is quite modest and should be further improved. Institutions closely connected to FCT also host research activities and have financial autonomy, being legally authorized to sign contracts and are also expected to assist with legal counselling, namely the *Fundação da Faculdade de Ciências e Tecnologia* (FFCT), UNINOVA, Madan Parque, and IBET (see section 5.3.1).

5.2.5 Mobility support for researchers

Financial support for the mobility of researchers is an exceptional situation; mobility is achieved by sabbatical leaves, fellowships to PhD and post-doctoral students, and grants for senior researchers. Common funding sources for researcher mobility are specific international *consortia* or FuCT funded research projects. Recent examples include the collaborative research programmes with UT Austin, MIT, and CMU. Incoming researchers may receive scholarships from international *consortia* covering travel expenses, and they are locally assisted by the appropriate administrative offices with the tasks associated with moving and installing.

5.3 Technology transfer

5.3.1 University – industry relationships

A Committee was created at the Rectorate to coordinate and enhance entrepreneurial activities and culture within the university. It is chaired by one Pro-Rector and has representatives from all AUs. As with fundamental research, relationships with industries are conducted at unit level, although in some cases with the participation of more than one unit in the same project or contract. The Rectorate coordinates technology transfer activities, including patent registrations, in cooperation with *Gabinete de Apoio à Promoção da Propriedade Industrial* (GAPI), the Intellectual Property support unit located at Madan Parque (see below). IBET has registered and owns some patents related with its direct activity that, in some cases, were negotiated with the participation of the Committee at the Rectorate. Furthermore, and in close collaboration with FE, a techno-entrepreneurship training programme – Techpreneur – was created to develop entrepreneurship skills and culture within UNL. UNL has the longest established entrepreneurship competition in Portugal – Start – through which more than 1500 projects have been scrutinised. More than 10 of these are currently successful University spin-offs and many are now established companies. Besides entrepreneurship training activities at different AUs, in 2008 UNL launched an internal business school competition aimed at Master students from all the university.

Situated in the same building of ITQB, IBET (www.ibet.pt) is a not for profit institution and the largest biotechnology research organisation in Portugal. ITQB, FCT and the UNL Rectorate are partners of IBET along with other seventeen partners, of which fourteen Portuguese companies from the private sector. IBET acts as an interface between its partner institutions and industries and as a support to its autonomous knowledge. Its pilot plant infra-structure operates as "current Good Manufacturing Practices" (cGMP) and three of its services are certified "Good Laboratory Practices". These constitute a unique group at the national level. IBET has a long track record of collaborative R&D in areas such as Biopharmaceutical Products, Vaccine Development, Medical and Veterinarian Diagnosis, Production of purified proteins for research of Structure-Function relationships, Starter Cultures of Micro-organisms, and Supercritical Fluid Extraction. IBET also has an important role as incubation for start-up companies; a recently launched spin-off will be producing biopharmaceuticals for phase I/phase II clinical trials under cGMP from June 2009 onwards.

The *Instituto de Desenvolvimento de Novas Tecnologias*, UNINOVA (www.uninova.pt) is located at the FCT campus and its partners are FCT, *Associação Industrial Portuguesa* (AIP), *Instituto do Emprego e Formação Profissional* (IEFP) and *Instituto de Participações do Estado* (IPE, a state-owned financial holding). The main aims of UNINOVA are to pursue scientific research, technical development, high level training and the creation of new technological innovation centres and small firms. UNINOVA works closely with industry and, in the last years, several spin-offs were created as result of research projects. Madan Parque (www.madanparque.pt) is a park of science and technology located in FCT, which main goals are to favour innovation and entrepreneurship among researchers. It includes the GAPI, which supports researchers in filing national and international patent applications, and it hosts 22 enterprises drawing on various areas of knowledge with more than 100 collaborators (see Annex 5.9). NovAlmadaVelha (www.novalmadavelha.pt) is an organization devoted to the development of activities at local level that aims to unite contributions from different players in a complementary form. It maintains a Business Centre and has produced the Almada Digital City project, to disseminate the usage of new technologies and strengthen the digital presence of the city of Almada in the Internet.

Annex 5.9 shows the data on patents registered by UNL researchers (2005-2007) and spin-offs originating from research conducted at FCT and ITQB. In brief, it can be stated that the results of an enhanced entrepreneurship culture are already noticeable.

YDreams is an example of a successful spin-off implanted at the Caparica Campus. It started in a university research group and nowadays is an international company that employs more than 150 people and develops and sells new interactive technologies.

ADISEGI is the Association for the Development of ISEGI, formed by eleven public and private institutions with the main purpose of promoting the relationship between the academic and the industry communities. Technology-transfer issues do not apply to the type of research carried out at FE, but a significant number of economic studies are requested and funded by outside institutions; this activity is not organized by the school, and arises instead from its researchers' reputation amongst outside organizations. ENSP has a strong relation with health services and health-policy makers. Several research projects and studies are currently carried out in collaboration with public and private institutions in the health field, which combine scientific interest and support to decision-making processes.

5.3.2 Intellectual property rights of researchers and institutions

In 2005, the Rectorate produced regulations for intellectual property mainly focused on patents registered by the researchers and lecturers. These regulations are not very clear in some important issues, such as the percentage of income that is assigned to the university and to the researcher and it is a general opinion that revision needs to be discussed.

5.3.3 Utilisation of research results

In all AUs the vast majority of research results contribute to the advancement of science, through publication in specialized (peer-reviewed) journals or books and presentations in conferences. In some cases, research results have been protected by patents and used by companies.

Some AUs, besides publication of basic research results, perform applied research in some areas to support problems assessment and decision-making on a wide range of issues, mostly contracted by public entities (local governments, state agencies, schools), often supported by basic research as well. At ENSP, the writing of reports that formulate recommendations to decision-making processes is a crucial activity, but each project is also expected to produce valuable scientific outputs to be published in national or international scientific journals. Special cases include FD where research results tend to appear not only in papers published in periodic publications but also in handbooks and other non-periodic publications such as commemorative works.

At FCT, Madan Parque is structured to exploit research results but is expected to have a more proactive role in identifying opportunities, contacting research groups and analyzing their achievements. So far and in general most of the initiatives come from the researchers and this approach may hinder the impact of good ideas in the economy.

5.3.4 Specific initiatives to attract contract research

IBET connects ITQB and FCT researchers with companies and some contract research have resulted of these efforts; at other AUs, such as IHMT the local initiatives and contacts were not based on a coordinated management programme. Generally, it is felt that UNL should have structures to actively promote the enlargement of contract research (e.g. marketing, brokerage, interfacing with the economy in Portugal and Europe).

5.4 Funding and costing of research

Public research funding is mainly supported by the FuCT either through base-funding of research centres/ALs in accordance to the evaluation results (pluriannual funding) or through research projects obtained on a competitive basis. The evolution of the number of projects financed by FuCT in the calls of 2002, 2004, and 2006 is shown in Annex 5.10. The contracted budget from these research projects rose 33% from 9 million € in 2004 to 12 million € in 2006 (approximate values). The percentage of success in the 2006 call varied significantly among different AUs, but globally more than 350 proposals were submitted and 186 were financed. Annex 5.10 also shows (Table 10.1) the contracted budgets from FuCT projects/contracts that were running in 2005 and/or 2006 and/or 2007 but may have started 2005 or will finish after 2007, as well as the pluriannual funding of the research units. These projects are executed in the AUs and also in interface institutions such as FFCT, UNINOVA and IBET. Additionally, public funding relies in other sources, such as the European Union (20% of the total public funding in the period 2005-2007) or other international/national organizations and from contract research (22% of the total public funding in the same period). There is also private funding from industry contracts or other services that made up 11% of the

total funding in the period under analysis. Table 10.2 shows the budget actually spent and accounted for in 2007 in the different AUs, obtained from the pluriannual funding and from projects and contracts financed by public and private entities.

The reduced capacity to succeed in obtaining European funding is a serious weakness. At the unit level some measures are being implemented to reverse this situation, namely the hiring of specialized personnel (science managers) to assist the researchers in the submission of proposals. At the Rectorate, the RSO and the International Affairs Office disseminate all the relevant information concerning calls, deadlines, and other opportunities within the 7th FP. In the European Research Council (ERC) call of 2008 for Advanced Grants, one FCT researcher was awarded a top classified grant in Physical Sciences and Engineering. However, the number of applications to Starting and Advanced Grants must be increased.

5.4.1 Process of seeking new funding

The RSO disseminates, among the AUs, information about national and international funding: European funding, in particular the calls for research projects and grants of the ERC, has deserved special attention in this context. To increase the information available to the researchers and stimulate their participation in the 7th FP, the UNL will join (starting on January 2009) the UK Research Office (UKRO). This subscriber-based organization provides information tailored to the needs of users, on all funding opportunities through the FP, as well as other sources of funding for research and higher education offered by the EU and other European funding entities. Furthermore, an in-house “7th FP Proposal Writing Workshop” will take place in the beginning of February.

In the majority of the AUs, seeking new funding from domestic or international sources is mostly done at individual and research team levels. Institutional contracts, such as the AL contracts and Ciência 2007 and 2008 researchers are sought by the institutional leadership. There is the feeling that this situation can be improved.

5.4.2 Sustainable funding of research

Research units and individual researchers apply for financial support from private and public institutions at the national or international level. However, it should be stated that the funding required is very much dependent on the research area; life sciences, chemistry, and engineering require expensive equipments and consumables, while social sciences and humanities are less dependent on these items. AUs such as ITQB and FCT have not been able to ensure a sustainable funding for research and initiatives are being implemented to increase the sources and amount of private funding. The public budget is mostly used to support infrastructure and part of the salaries. In addition, there are large oscillations in research funding, which undermine the research efficiency and the proper use of money.

Until recently, the mechanisms above mentioned sustained an adequate level of funding for the research carried out in the Social Sciences and Humanities. However, for all AUs, late payment by FuCT during the last few years has become a major obstacle to the normal development of research activities, which the AUs tried to compensate for by committing their own resources through budget reallocation. This, however, has created major problems and is clearly not sustainable in the future.

5.5 Doctoral Programmes

With the implementation of the third cycle of the Bologna process, 26 PhD Programmes were recently created and registered at the MCTES (thirteen at FCT, five at FCSH, two at FE, one at FCM, two at FD, one at ISEGI, one at ITQB and one at ENSP) and two were adjusted to this regime (one at FE and one at FD) (listed in **Annex 2.2**).

The regulation for doctoral programmes for the university was approved in 2007, specifying the general prerequisites and procedures concerning the award of doctoral degrees. Additionally, and due to the diversity of scientific fields and requirements, each unit defined its own internal regulations, such as the classification of general and specific scientific areas, the duration and management of the doctoral studies, scientific supervision and thesis committees and rules to be followed for the public defence of the thesis (Annex 5.11).

5.6 Specific objectives and actions

UNL aims at increasing its potential towards improving international visibility and reputation as a research-oriented University. The main policies and actions will be established in the Strategic Plan (2009/2012).

However, some actions and procedures that will enable UNL to pursue these goals were already addressed and mentioned throughout the various parts of Section V, and include:

- Increase the number of publications in international peer-reviewed journals and the number of citations, so as to increase their impact as calculated by the CWTS study;
- Increase the impact of the subfields of higher production identified in the CWTS study;
- Establish potential consortia to maximize resources and output;
- Establish cross-faculty collaborations enabling to profit from the full potential of the AUs with activity in the biological sciences;
- Search for additional sources of income (private and public research contracts);
- Improve the connections to the industrial world in the majority of its research areas;
- Implement aggressive marketing/recruitment strategies of PhD students, post-doctoral students and research assistants;

In the short-term, specific improvements can be obtained through the implementation of some initiatives by the RSO, such as:

- Better selection and definition of non-WoS publications by the AUs for recording and quality assessment purposes;
- Yearly update of a research data base, that includes all items addressed in the annexes of this section;
- Periodic update of the CWTS bibliometric study in 2009 and following years;
- Subscription to the UK Research Office based in Brussels to increase information and technical input aiming at stimulating applications for EU projects and grants;
- Organization of events about cross-cutting themes involving researchers and staff from different UNL AUs, as already occurred with the *Ciência 2007* Workshop.

Final Remarks

NOVA has reached a turning point towards improvement of its performance as a university, taking advantage of the actual legal and statutory framework to foster specific capabilities through a new governance model that benefits from the developments that have taken place in the last two years. Indeed, it must be noticed that the previous legal and statutory framework did not allow for coordinated implementation of policies, since those holding the responsibility had a very scarce authority.

As it was already stated in the *Foreword* of the report, the next step will involve the development of a strategic plan with huge involvement of the university community (staff and students). NOVA has now all the assets to take this innovative step in its history. The new strategic plan will give the greatest importance to the people who make NOVA: students and their learning environments, teachers and their academics needs, researchers and their findings and non-academic staff and their supporting role. The strive to maintain a leading national role and an effective partnership in international networks of excellence can only occur if based on their creative power. NOVA is already accepted as a partner of society in different areas, it is now expected that it will have a broader role in societal development of regional, national, and global needs of society, through its essential mission of educating autonomous minds.

The recently elected General Council, with a third of external members, including the President, will play an important role in this process, since the Rector has the legal obligation to present the strategic plan of NOVA for its approval, after hearing the Board of Deans.

Besides developing the strategic plan, which will occur in the first semester of 2009, effective steps are already being taken concerning the development of a quality culture at NOVA. For that purpose, we will support the continuous work of the three self-evaluation groups: organization and management, teaching and learning, and research. The newly created Quality Office at the Rectorate will play a key role in the support of the quality monitoring of teaching, whereas the Research Support Office will play a similar role for research. In both cases, it is expected that the major role in quality management will occur at the level of the AUs.

The new statutes will keep NOVA as a decentralised institution but with better and more effective links amongst its AUs in research, teaching and services. The central decision making processes will be more effective with a specific focus on supporting infrastructures, such as information technologies, financial sustainability and human resources policies aiming at staff recruitment, development, and promotion.