

MANAGING THE UNIVERSITY COMMUNITY

The Challenges of Research Management: *Developing a research strategy and funding it*

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**Establishing a central research management office
as a step towards an institutional strategy**

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General Characteristics of the University of Genova:

Type of university: Public university
Number of undergraduates students: 40.465
Number of doctoral students: 728
Number of faculties: 11
Number of academic staff: 1659
Number of administrative staff: 1319
Budget volume and breakdown: € 402.727.699
Research budget: € 36.088.654

THE RESEARCH MISSION OF THE UNIVERSITY

The University, as an institution of production and transmission of culture is now more than ever called upon to invest greater resources into research activities. In a context highlighted by a rapid obsolescence of all knowledge, it is fundamental to invest in the production of knowledge, not only to develop ideas, technologies and methods, but also so that didactics can be expressed at a level of better quality.

The challenges progressively set by contemporaneity are pushing the University to develop didactics that interpret the formative needs of the outside world in light of the advances in research and therefore systematically study the quality of the activated curricular, the training standards reached and the most effective teaching methods to meet the ever differentiated social requests.

The University of Genoa is in a Region which does not have a very large pool of students and boasts of a strong tradition in research activity. This implies that, as revealed at the time of the CRE (now transformed to EUA) evaluation, it is strategic to focus on the strengthening and enhancement of research.

CONTEXT

The University of Genoa has always been very active in supporting research, however, it is very difficult to maintain the same level of financing over recent years due to the well known problems in financing research in Italy.

Considering this difficulty and the fact that researchers in universities are considered “free” to choose their own activities and fields, it is clear that it is difficult to implement the research policy to make choices and to address the research activity in specific areas or fields.

As suggested by the Evaluation Committee of the CRE who visited Genoa, evolution and better criteria for financing specific groups or units is very important. Some steps have been taken in this direction but much more still has to be done.

The CRE Committee suggested also to create:

- 1) a central level office where persons from outside the university, such as firms, authorities and citizens could find a single, easily accessible point, a science shop
- 2) the establishment of a patent office
- 3) strengthening the central office of internationalisation and put more effort into internationalisation
- 4) to develop a university –wide research policy

The evaluation and the distribution of resources (that are however scarce in Italy) must definitely have this function.

The decision made was however that of strengthening the central services of the University to improve the competitiveness of the University of Genoa.

A CENTRAL RESEARCH OFFICE

Most European Universities have a structure that deals with the promotion and management of research, using four types of organisational methods:

- Service centres within the University
- Service companies (Srl or Spa) owned by or including the University
- Foundations established by the University
- Associations (also in participation with regional government)

It is interesting to note how some of these research and / or development centres have successfully widened their range of services offered, from 'start-up' assistance to favour the birth of new business opportunities, to strengthening the relationship with the non-profit sector (for example, with the world of international cooperation).

This way, the University exerts even more its role as an institution of the propulsion of knowledge, promoting the transfer and evaluation of the results of research in function to the needs expressed by the fabric of the local community.

A service centre, regardless of its juridical form, should furnish:

- An Informative Service on Research Sources of the EU and other financial organisations to supplement the missing information from the side of potential proponents (information research is an onerous activity: thus it is necessary to stimulate the use of European funds).
- A type of administrative-financial assistance for Research projects (from the simple facilitation of the bureaucratic presentation of proposals to the management and coordination of projects between universities, companies and research institutes on a national and international level), Formation Programmes and Consultancy Activities.
- Support for partner research and the creation of national and international networks (calls for proposals nearly always ask for research activities that are parallel and in different countries)
- 'Follow-up' service: following the projects even after their presentation and maintaining a relationship with officers of the European Commission. For this it is necessary to have at least one person in Brussels.
- Realisation of joint initiatives between Universities and businesses in the environment of not only research but also in certification and education.
- Promotion of knowledge transfer and innovation, favouring the circulation of people, activating new cooperation channels with associations and organisations to increase the exchange of information and collaboration between all the parties interested in research.
- Marketing and Public Relations services (relating with businesses, contacts with associations, and communication between the research and business worlds.
- Organisation of congresses and conferences for the promotion of University research to increase the visibility of the activities carried out within the University.
- Personnel training dedicated to the development of new forms of financing.

The centrality of an active research policy is now a common value shared both internally and between Italian universities.

The University of Genoa has on more than one occasion confirmed this centralisation by observing the strong link between education and the strategic objective of focusing on quality, to be more and more competitive in the national and international panorama. The reflections and judgements made by the CRE regarding the necessity to 'orientate' and support our research policies can only confirm these guidelines.

The University of Genoa, from this point of view, three years ago elaborated a project to establish a service Centre or Research Office (by deliberation of the University Senate of the 19/03/2001 and of the Administrative Board of the 26/03/ 2001, the "Proposal for strengthening research policies" was approved.

The “Research Office” was established by Rector Decree n. 121 of the 15/04/2002), with the following objectives:

A) Activity responding to the precise needs on request of the researchers (Environment: European R&S, regional, national and international projects)

Information: meaning especially information aimed at complementing the activity of both external structures and those within the University (Aprè – Italian Agency for the Promotion of European Research, Innovation Relay centre).

Orientation: consultancy on eventual alternatives to the chosen programmes, verification of the available resources and of the level of competition for the different prospected alternatives, checking the official and forecasted deadlines, verification of the strong and weak points of the different solutions in respect to the specific needs of the user.

Assistance in the presentation of proposals: can involve a variety of activities, such as the clarification of the rules and constrictions of the programme, assistance in its layout, revision of the proposal for the not purely technical aspects, contacts with the financial organisations, an initial orientation on the intellectual and industrial property to correctly plan out the proposal without penalising the results of the research, partner research in Italy and abroad.

Partner research: can be a separate service or inserted into a wider activity of assistance (previous point), can concern the individualisation of partners to participate in common research projects in Italy and abroad, or can be orientated towards the technological transfer, or towards commercial based collaborations.

Management and reporting of the projects: the two activities are analytically and operatively separable: the management can be necessary for coordination of the work group, to insure the forecast timelines are respected, to coordinate the different parts of the work to reach the forecast objectives and to help resolve the problems of various nature and those sometimes unexpected. The financial reporting assistance concerns the rules of cost input, eligibility verification, correct financial management, verification of the consumption costs in respect to those in the project estimate and the management of eventual problems or controversies with the financial organisations. This activity, should it occur, must be faced in strong collaboration with the Financial offices.

Protection of property rights: initial guidance on property rights and patents, to avoid the more common errors; assistance and accompaniment during the broadening phases of these themes with the subjects in charge (Patent office, Patlib, eventual consultants).

Assistance with company relationships: concerns all of the relations with the industrial world and companies, from the individualisation of the companies based on the researchers needs, to the initial contact stages, to assistance in relations (according to the needs that emerge case by case). As a general line, it could be defined as a ‘translation’ service or as a bridge between the two realities. The aim is to make collaboration easier, by trying to overcome the controversies and problems where the greater part of misunderstandings arise.

B) Activities promoted directly by the Services Centre

Relation and coordination with other organisations in charge of orientation (Aprè – Italian Agency for the promotion of European Research, Chamber of Commerce, Town Council). A tighter collaboration is necessary with the mentioned structures to programme information activities and orientate it towards the ‘discovered’ themes or towards the specific needs of the University (more in depth information, information on national research programmes, researcher exchange programmes financed on a national level- or based on bilateral international agreements).

Organisation of events to investigate specific themes of interest to the University, complimented by / in collaboration with Aprè and other subjects.

Promotion of industrial and institutional relations: the activity, in this case, is proposed and involves the research and promotion of collaboration opportunities.

Information and assistance point for businesses: businesses that would like to explore the possibilities and ways to collaborate with the University would find help in clearing doubts, individuate partners within the University, establish contacts and start up agreements.

Assistance in the relationships between actual and potential financial institutions (Commission and local organisations): can concern both the activities underway and the verification and promotion of new opportunities (for example, participation in the activities of monitoring and consultation launched by the above mentioned organisations in sight of new programmes or new strategies, stimulation of new programmes etc.).

Promotion of the technological transfer and dissemination of the research results: the objective is to make the research results known abroad, in anticipation of industrial collaboration, technological transfer agreements, contracts committed to the University, etc.

Favour a real knowledge of the Universities research system: interact with the surrounding structures, assist in the compilation of data for the University research information system and be capable of extracting synthetic data.

C) Support for an active internationalisation policy

For this activity, other than those mentioned in the previous points, help can be hypothesised in the stipulation of **international agreements** and in general the **promotion of the University of Genoa** abroad.

D) Support services to the internal workings of the disciplinary Scientific Areas and to the management of University projects.

This activity concerns all of the part that is already traditionally carried out by the current Research office and it is opportune that it is maintained in the new structure. An extended treatment is not presented here, only some points from memory, of which are the University projects, monitoring contracts and conventions, budget management support (divided or new per area) for research. It is understood that some of these activities require a definite disproportional commitment to the conciseness of the handling.

Towards those responsible for the research policy

More in general, these objectives should be integrated with structural activities directed towards the total management, programming of the new and verification of the objectives. In particular:

- Individuation of new opportunities and verification of interests
- Relations with institutional organisations at various levels for finding new financial sources
- Verification of the opportunities to collaborate with external organisations to the University, both institutionalised and private
- Activity planning, realisation of work plans, including objectives, actions and times
- Monitoring the activities carried out
- Verification and correction of the successive work plan, based on the obtained results
- Identification of new objectives
- Verification of resource suitability in respect to the prearranged objectives
- Support and assistance in the elaboration of documents
- Participation in seminars and meetings on research on a national and international level

REALISATION OF THE PROJECT

The project has been realised through the establishment of a special office on the executive level, directly dependant to the Administrative management.

The actual activities carried out by the office can be summarised as follows:

- Activity of information on the calls for proposals and financing opportunities
- Orientation activities and assistance in the presentation of proposals, in project and accounting management
- Partner search
- Business relations
- Assistance in patents and business agreements for commercial exploitation
- Telephone help desk
- Relations with institutions and other organisations
- Elaboration of project proposals
- Organisation of congresses, information days and seminars on research and innovation programmes
- Assistance to highly qualified University laboratories in the preparation of the Manual of Quality

Activity of information on the calls for proposals and financing opportunities

Is divided into a wide range of actions, among which:

- monitoring the calls for proposals
- definition of a communication strategy and of the diffusion of information to the teaching staff, researchers and businesses, through Diogene web site
- the elaboration of synthetic information
- targeted diffusion of information to the departments and simultaneous publication of information on the research section of the University website

The University can therefore count on an exhaustive information service, timely and targeted concerning both the international/European and national calls for proposals. The information, opportunely summarised, is sent to potentially interested departments and only if of general interest, to all of the teaching staff and researchers. From numerous verifications it has been possible to establish the appreciation towards the service, moreover, positively evident from the fact that the information is often forwarded to external partners to the University, such as businesses, other public organisations, etc.

Information of interest to businesses is also diffused on Diogene, the dedicated business website through which the University of Genoa dialogues with the entrepreneurial world on technological and research innovations.

The University website, under the 'Research' section is constantly updated and contains all of the information diffused in a targeted manner.

Orientation activities and assistance in the presentation of proposals, in project management and financial reporting

This activity is carried out as a result of the information activity, both on the answering of specific requests from researchers and the administrative personnel, independently to the information given out. Currently the University can count on a support service that constantly carries out assistance and consultation in the same way as the private sector. The requests are numerous and are increasing; they involve both email and telephonic answers and especially, meetings dedicated to the investigation of problems and the individualisation of possible solutions. Assistance provided both for the teaching staff and researchers and for the administrative personnel of the departments. For these, the action is part of a wider strategy of training and updating of the administrative personnel working within the departments, so that the Research Service can work in a complimentary way to the departments themselves and in the meantime, face all the needs that arise. The activities concern both national and European programmes, based on the specific needs. Particular attention is given to correct project management and reporting and especially to solving problems which are particularly difficult or controversial.

Partner search

The office guarantees a service aimed at the research of partners for research projects and the transfer of technology. On request, an ad hoc research is carried out aimed at individuating (on a European level) the most suitable partner to the requested profile, making also use of a private website run by the

University of Coventry, to which over 300 European organisations are subscribed. The service is effective and notably increases the possibility to participate in European networks, without necessarily carrying out the demanding role of coordinator.

The promotion of partner research concerning the particular criteria for small to medium enterprises (that are the particularly cared for and supervised by the Research Office) also has the objective of increasing and improving the joint University and business projects.

The diffusion of partner research coming from abroad allows researchers to join a pre established consortium and to increase in this way their own research income.

The research of partners of interest to businesses is diffused to the companies themselves through Diogene.

Business relations

The University is has an information and assistance point for the companies that want to collaborate with the University. The service works to both facilitate the initial contact (the business that is interested in a collaboration, but does not know who to contact, turns to the office, which individuates the 'correct' researcher and put them into contact with each other), and to assist in the presentation of project proposals to the financial organisations, if promoted jointly by the business and the University. There are numerous concrete cases that include (as could be expected) small to medium businesses, but also businesses of bigger dimensions that use the service to compare opinions, exchange information and supervise proposals.

The activity obviously also concerns trading associations (prevalently the Industrial Association of the Province of Genoa as well as Dixet, the Chamber of Commerce and other organisations), with whom a continuous collaboration has been started up. This activity concerns both the activity of assistance to concrete cases and the organisation of meetings and seminars dedicated to University – business collaboration (for example, using the facilitations forecasted by the law 297).

Businesses are growing more interested in interacting with the University, therefore the explorative meetings are both numerous and on the increase, aimed at identifying the possibilities of collaboration.

Assistance in patents and business agreements for commercial exploitation

An assistance activity has been started up for patents, regardless of the difficulties connected to the legislative conditions (Tremonti law and its subsequent modifications, currently underway). The principle points on which the activity has been concentrated has been assistance to the teaching staff for specific cases, verification (with the help of the Patent office in Genoa), of the effective innovative character of the invention, contacts with the patent consultation society (also directed at lowering their operating costs, through a greater negotiating power), contacts with agencies to stipulate eventual license agreements of cessations aimed at the commercial exploitation and patent extension to a European level.

Telephone help desk

An activity of telephonic assistance is carried out daily on the more dispersed themes (research programmes, patents, conventions with businesses, contract management, etc.) on the request of the teaching staff, researchers, administrative personnel and businesses. This type of work, although based on periods, is by and large on the increase.

Relations with institutions and other organisations

The relations are constant and concern the numerous subjects, among which are the Province of Genoa, the Town Council of Genoa, Industrial Associations, European Union, Apre – Italian Agency for the promotion of European research, Region of Liguria and other Universities.

Elaboration of project proposals and project management

The Office is currently directly managing two projects financed by the Ministry of Research, but others are in the project elaboration phase.

Organisation of congresses, information days and seminars on research and innovation programmes

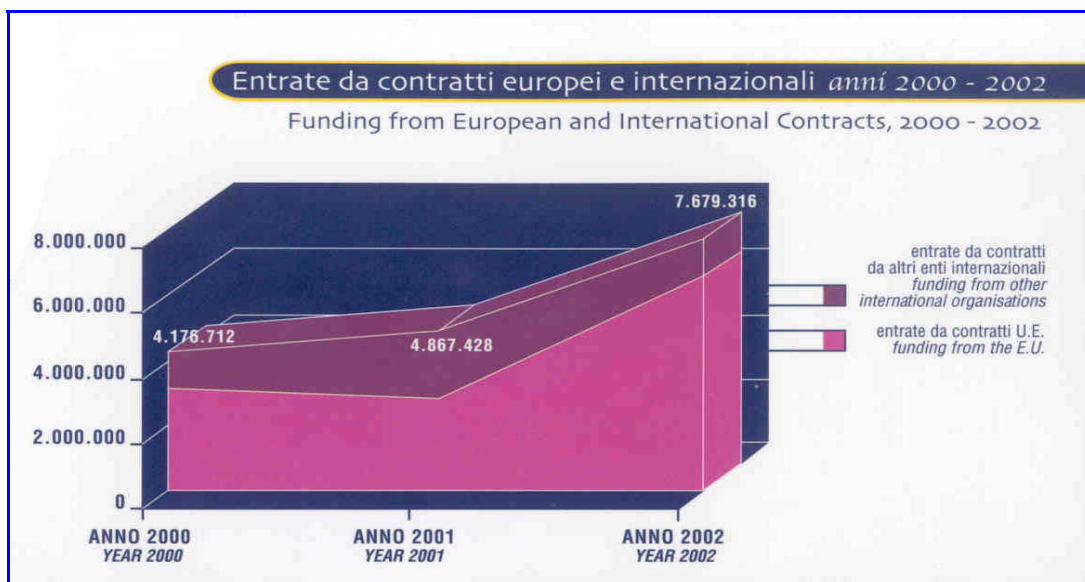
On average 5-6 seminars are organised per year on the different financial opportunities for research. Some of these, the most relevant, were open to the business public and to others in charge of work on a national or international level.

The participation of the seminar speakers, on invitation of the other organisations, is even more relevant in terms of numbers.

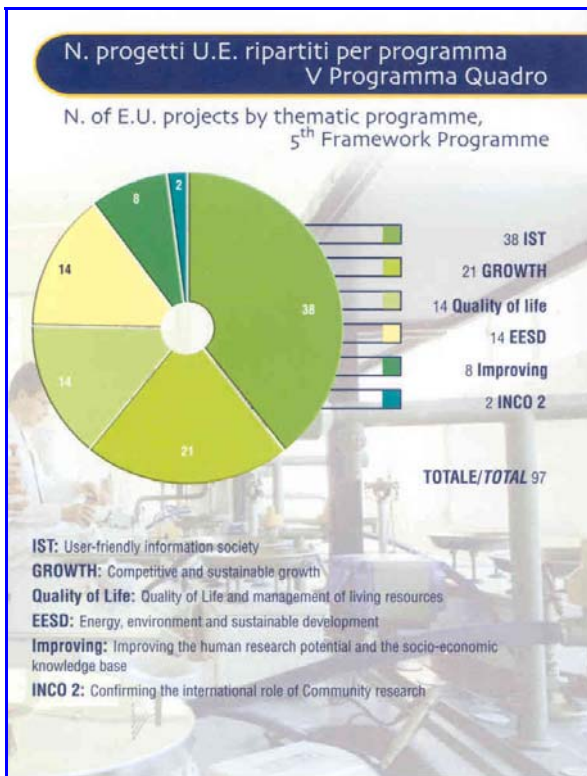
RESULTS

Under the profile of international relations, the University of Genoa has numerous European and international contracts underway, both financed by the Technological Research and Development framework Programme, and under other programmes.

The sum of European contracts in 2002 was over 6.6 million Euro, while the total value of international contracts is nearly 7.7 million Euro. European projects in particular have registered a notable increase in comparison to the preceding year, certifying a more than double amount in comparison to 2001.



Under the profile of the competitive position in a national panorama, the University with its 97 European projects under the V Framework Programme, is positioned among the first six Italian Universities, covering the thematic programmes.

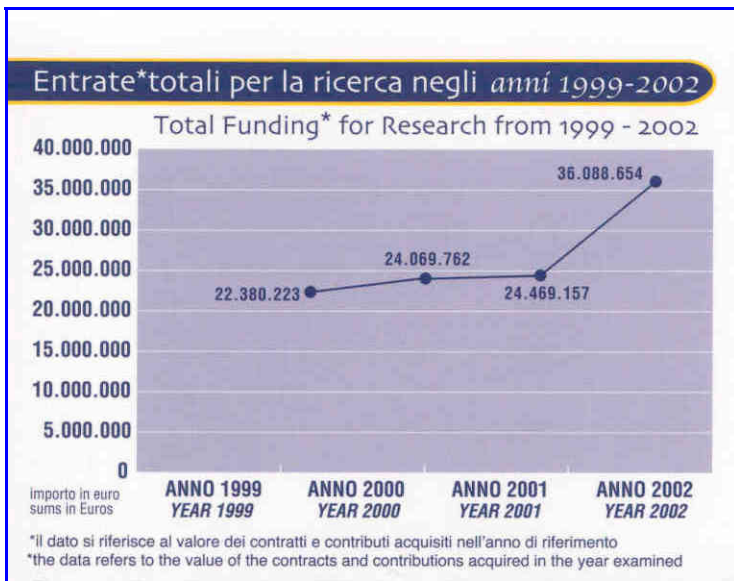


The participation of the University in European projects as coordinator concerns a high number of projects, ranging from the biomedical sciences, including the biotechnologies, to the Information technologies, to the Industrial and Material technologies.

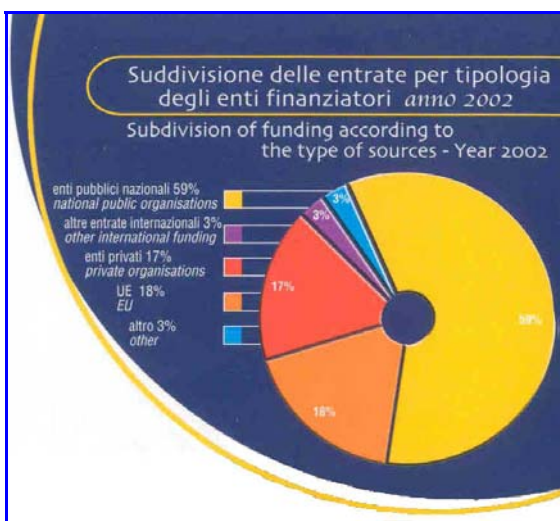
Partecipazione dell'Università di Genova al V Programma Quadro in qualità di Coordinatore
 Participation of the University of Genoa to the 5th Framework Programme as Coordinator

Prof. Alessandro Armando - DIST "Automated Validation of Internet Security Protocols and Application" AVISPA, IST	Prof. Paolo Pozzobon - DIE "Railway Electro Optical System for Safe Transportation" REOST, IST
Prof. Giulio Sandini - DIST "Artificial Development Approach to Presence Technologies" ADAPT, IST	Prof. Stefano Savio - DIE "Rail Car Asset Management" F-MAN, IST
Prof. Fabio Lavagetto - DIST "Multimodal analysis/synthesis system for human INTERaction to virtual and augmented environments" INTERFACE, IST	Prof. Eugenio Moggi - DISI "Dynamic Assembly, Reconfiguration and Type-checking" DART, IST
Prof. Giulio Sandini - DIST "Mirror Neuron based Robot Recognition" MIRROR, IST	Prof. Antonio Guerci - DISA "Living and "healing" old age in the world-third international conference on anthropology and the history of health and disease" WORLDAGE, QUALITY OF LIFE
Prof. Antonio Camurri - DIST "Multisensory Expressive Gesture Applications" MEGA, IST	Prof. Alberta Mandich - DIBISAA "Environmental agent susceptibility assessment utilising existing and novel biomarkers as rapid non-invasive testing methods" EASYRING, QUALITY OF LIFE
Prof. Alessandro De Gloria - DIBE "A hand-held assistant for electronic guided tourism" E-TOUR, IST	Prof. Carla Falugi - DIBISAA "Tissue engineering of living biosensors to evaluate risks for health by neurotoxic pesticides" SENS-PESTI, QUALITY OF LIFE
Prof. Sergio Martinola - DIBE "A bioartificial brain with an artificial body; training a cultured neural tissue to support the purposive behavior of an artificial body" NEUROBIT, IST	Prof. Bruno Bianco - ICeMB "Risk assessment for exposure of nervous system cells to mobile telephone EMF: from in vitro to in vivo studies" RAMP 2001, QUALITY OF LIFE
Prof. Silvana Dellepiane - DIBE "Monitoring the yard in Container Terminals - Trials" MOCONT-II, IST	Prof. Maurizio Mazzucchelli - CIRT "High voltage booster second phase" HVB2, GROWTH
Prof. Stefano Savio - DIE "Enhanced Control centres for fixed and Moving Block signalling Systems-2" COMBINE 2, IST	Prof. Paolo Pozzobon - CIRT "Electromagnetic compatibility and advanced rail transport signalling" EMCARTS, GROWTH

The total income for research registered a large increase in 2002, due to in particular to the already mentioned European contracts and to the contribution of the new national programme FIRB (Fund for the Investments in Research Bases), that has contributed to the total with more than 8 million Euro. The University of Genoa has definitely distinguished itself in the competition at a national level, acquiring more than 8% of the national total of the autonomous FIRB and more than 17% of the contractual national total, much more than its weight in researcher percentage.



Of the total research income, the contracts with businesses represent 17% of the total, a quota nearly equal to that of the contracts with the EU. The increase over the recent years must be highlighted by the contracts with multinational and foreign businesses, testimony of the increasing internationalisation of the University of Genoa.



CONCLUSIONS

The experience matured up to now has shown itself to be extremely positive to the full appreciation of the central structures, and especially of the teaching staff.

This result stimulates a greater commitment in the management of the challenges determined by the constant evolution in a national and international context.

Not everything forecast has been realised. The project had to face and overcome a difficult situation in financing, together a block at national level on the employment of personnel. For an experimental office, now consolidated, this has brought about difficulties in the permanent recruitment of personnel and obvious limitations in its activities. Indeed, the activities carried out by the office have reached a saturation level in terms of answering customer requests.

The lesson has however been significant, both for the results and the characterisation of a straightforward service directed to the user, with a continuous control of 'customer satisfaction'.

In the future, these kinds of services should be further extended and promoted. In this context a greater integration with the office of International Relations is forecast.

The most important result is that this type of strategic approach to services of a high level has now been adopted both within the administrative and teaching staff bodies. This makes it possible to continue in the future with a policy aimed at strengthening this structure, in compatibility with the financial difficulties of the University.