

Research support services at UPC libraries

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Technical University of Catalonia (UPC) Libraries

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ABSTRACT

For European universities the year 2010 is crucial to their two main activities: teaching and research. Much has been said about the *European Higher Education Area* and about the innovative aspects of university teaching. However, we should also consider research, as the European Union governments have also set 2010 as the starting date for the *European Research Area*, whose aim will be to enhance research throughout the old continent and place it on a par with the current world leaders: the United States and Japan.

Within the new frame work for higher education in Europe, university libraries have already shown that they can offer quality learning support services. European research is basically undertaken at universities. Institutions of higher education will have to be one of the driving forces behind the ambitious project to improve research policy, and university libraries will have to demonstrate that they are capable of offering first-class information services.

This paper sets out the initiatives undertaken by UPC (Technical University of Catalonia) libraries in support of research. It is clear that cooperation between the academic and library communities is, and will continue to be, a key factor in meeting the challenges set.

Although we concentrate on our own particular university, the research support services offered by the Library are evolving in much the same way as they are at most Spanish universities. These initiatives focus on the following aspects: access to quality scientific information, the dissemination of the Open Access movement, support for information management (the creation of specialist websites and the availability of reference management systems), the dissemination of the University's scientific output (heightened profile for the journals published by the University and for doctoral theses), advice regarding legal protection for the information generated by the scientific community (providing information relating to copyright and publishing issues) and also the dissemination of the results of the University's research, as a means of providing the encouragement that the University wants to give its staff to publish more and in the best journals (the creation of an observatory of scientific publications).

UPC AND THE UNIVERSITY LIBRARY

The Technical University of Catalonia (UPC) was created in 1971 and consists of ten schools and faculties and five colleges, which are located in Barcelona and several other towns, such as Terrasa, Manresa, Sant Cugat del Vallès and Vilanova i la Geltrú, and on the Baix Llobregat campus. At present, there are 28,362 students (at the University's schools, at first and second cycle level), as well as 5,099 students at partner schools, 2,604 teaching and research staff and 1,280 administrative and service staff. The University's total budget is €242,835,638.

The University Library consists of 13 libraries (2,406 reading places) located on the University's various campuses. The collection comprises 420,000 volumes, 10,664 journals, 6,772 electronic journals and 152 databases. There are 193 people working in the libraries, including 46 scholarship students, and the budget for 2005 is €1,868,234.

The University Library is a member of the Consortium of Academic Libraries of Catalonia (CBUC), which was created in 1996. It shares a union catalogue and has access to the Digital Library of Catalonia, a collection of electronic information (journals, databases and electronic books) jointly maintained by all its members. The University Library is also a member of REBIUN (Network of University Libraries), a network which was created in 1988 and which is made up of the libraries of all the universities in Spain.

RESEARCH AT UPC: 2010 HORIZON

The European Research Area (ERA) is above all aimed at coordinating the different bodies involved in research. After an in-depth analysis of the weaknesses of the European research system (limited public and private investment, a shortage of human resources and mobility, a lack of competitiveness and excessive bureaucracy), it is clear that, in order to progress, three key lines of action need to be promoted: innovation, education and new discoveries.

At the Spanish level, the main objectives of the 2004-2007 National Plan for Research, Development and Technological Innovation are to increase the quantity and quality of science and technology and to heighten their international profile; to increase the number and the quality of human resources, in both the public and

private sectors; to raise awareness of technical and scientific advances; to increase technological capacity; and to promote the creation of innovative businesses.

Along the same lines as the European and Spanish national policies, the autonomous government of Catalonia has established the following six priorities for the period 2005-2008:

- To increase investment in research and development up to 2% of GNP and to ask every university to draw up its own strategic research plan.
- To increase human resources and improve working conditions for researchers.
- To create structures that increase cooperation between and strengthen Technology Centres at Catalan universities.
- To improve the coordination of the different parties involved in research (between local government departments and national and European governments).
- To promote Catalan research abroad and to attract “brains” from abroad.
- To promote science in the everyday life of ordinary people so that it is not the reserve of an elite.

As set out in the 2005-2010 Plan for Research, Development and Innovation, UPC aims to increase the quantity and quality of research, development and innovation through initiatives that are specifically aimed at those people and collectives who allow us to make the most of the opportunities afforded us by our situation, thus helping UPC to become an important player in the economic and social development of the region. There are five main lines of action: a strategic social agenda, recruiting talent, valuing the results of research, new organisational formulas and contrasted quality. This is how UPC intends to become a benchmark among technological universities in Europe, placing itself within the top ten.

Like most universities, the Technical University of Catalonia is making progress in different research-related fields, and a particularly noteworthy example of this is the recent creation of the Barcelona Supercomputing Center, which houses the Marenostrum supercomputer: the fourth most powerful supercomputer in the world, the most powerful in a public research institution, and the most powerful in Europe. This is an important example of the impetus that this university wants to give to research.

LIBRARIES AND RESEARCH

UPC libraries clearly pay special attention to the University’s Research Plan. Not only has its recent creation been closely monitored, but it has also been possible to include the libraries in important areas of this framework document, such as the desire to strengthen channels that provide free and open access to the results of scientific and technological research, the intention to provide researchers with resources and services in their research areas through library management and specialised information services, cooperation in assessing research, etc.

Even though until recently the University Library was considered by many academics as a service directed exclusively at students and certainly only addressed to the needs of staff in their role as teachers, not to help them with their research, these initiatives reflect a new vision of the way members of staff use the Library.

Paideia, the UPC Library's strategic plan for the years 2000-2005, includes a line of action called **Libraries and Research**, which focuses on the acquisition of resources and the introduction of services aimed specifically at the research community.

UPC librarians, together with most of those at Catalan and Spanish universities, have received specialist training in Information and Documentation, although not in the University's areas of expertise, which are engineering, architecture, IT, naval engineering, aeronautics, agriculture and mathematics. Faced with the challenge of training researchers how to use the tools needed to access the specialised scientific information that is available at the libraries, it was necessary for the librarians to have some basic knowledge without being experts in the field; they only needed to know how to use the information resources related to the subject.

First of all, an exhaustive study was performed of the areas of research at the University, the existing lines of research, the departments involved and their activities. Once this UPC research map became available in 2001, subject-specific networks of librarians that match UPC's research areas were set up.

To date, the work undertaken in this sphere has been the following: the creation of subject-specific teams of librarians, the creation of a tree structure of technical material for the purposes of organising the resources in the digital library, training librarians in their areas of specialisation and designing user training programmes (third cycle, postgraduate, lecturers, research institutes).

At present the content of the new strategic plan for the coming years is being designed, and special emphasis will continue to be placed on involving libraries in all initiatives related to research.

LIBRARY RESEARCH SERVICES

Even though this document is focused on the most innovative library research services, some reference will at least have to be made to the most "basic" services, which are those that are most used by students in senior years and teaching staff, that is, the specialist information service and information literacy offered by subject-specialist librarians, the document delivery service and in situ loans (which allow teaching staff and doctoral students at any Catalan university to take out documents on loan from other university libraries that are members of the CBUC), and bibliographic reference management systems (the Institute of Scientific Information's Writenote, Reference Manager, End Note and Procite).

Accessing scientific information

At present, the number of information resources that are available at UPC is similar to that at other prestigious technical universities in Europe; the collection comprises both material that has been bought and is restricted by licence agreements (as we shall see below), material produced at the University, and open access resources that are available online and that are also part of *Bibliotècnica*, UPC's digital library.

Since 1999, the Consortium of University Libraries of Catalonia (CBUC) has followed a clear line of action with regard to negotiating licences for electronic resources through consortial purchasing of journals, books and databases, which

are offered together with electronic resources produced by members of the Consortium (domestic databases).

Work began for the collective licensing of electronic resources in 1998, with the aim of providing a common core of electronic information for all users of CBUC libraries. Most of the subscriptions are paid by library members, though the Government also provides complementary aid.

Several electronic resources have been subscribed to since 1999. By March 2005, its holdings amount to 6.800 e-journals: American Chemical Society, American Institute of Physics, Blackwell, Elsevier, JSTOR, PCI Full Text, SpringerLink, Wiley InterScience; 3,650 e-books: Harrison's Online, Lecture Notes in Computer Science, Safari Tech Books Online, Oxford Reference Online Core Collection; 36 databases: Business Source Elite, IEEE Xplore, MathsSciNet, and Zentralblatt Math and 22 Spanish databases.

In 2004, REBIUN (Network of University Libraries) pressured the Ministry for Science and Technology into subsidising the subscription to the Web of Knowledge of all Spanish university libraries. Continuing with this strategy of partial or total funding by the national government, for 2006 negotiations are under way for a one-third subsidy of the cost of Elsevier's journals.

Dissemination of "open access" at UPC

Extending the awareness of the academic community

Since 2002, the University Library has led various initiatives aimed at spreading the movement for open access to scientific information. In 2002, UPC became a member of SPARC (Scholarly Publishing and Academic Resources Coalition), and the University Library, together with the University of Barcelona (UB), took on the job of translating into Catalan and publishing the *Create Change* leaflet.

In 2003, the Third REBIUN Workshop was held, which focused on changes in scholarly communication. It was attended mainly by librarians, but there were also some lecturers and managers from Spanish universities. Noteworthy speakers included Jean-Claude Guédon (University of Montreal), David Prosser, (director of SPARC-Europe) and Christopher Gutteridge (an IT specialist from the University of Southampton and an expert in e-prints software), among others.

At present, there is a touring exhibition at the UPC libraries called "Towards a new scholarly communication", which uses text and images to demonstrate the current situation of scholarly communication, the philosophy of open access and also worldwide initiatives to bring about changes in the current publishing system (World Digital Mathematics). The aim of the exhibition is to raise the awareness of the most important people in the system: the writers, who are very often university lecturers. The content of the exhibition can also be visited online at http://bibliotecnica.upc.es/e-portals/comunicacio_cientifica/.

Since 2004, and after a process of inputting back issues, the University Library has now included two journals published by UPC departments in the Digital Library. At present, work is under way to provide open access to the other 17 journals published by the university.

TDX: Online Doctoral Thesis Server

TDX is the first document storage facility UPC has participated in. It is a joint project that contains the doctoral theses defended at Catalan universities in digital format. Theses that are written and defended in electronic format are incorporated into the server, together with some theses defended in recent years which previously only existed on paper but have been converted to digital format.

The aims of the TDX are to make the results of university research available around the world via the Internet, to offer the authors of the theses a tool that increases the profile of and access to their work, to encourage the creation and use of the University's scientific output and to improve bibliographic control of the theses.

FènixDoc: full-text versions of the scientific output of UPC

FènixDoc is a joint project undertaken by the University Library and the Planning, Assessment and Studies Area (APAE), whose objective is to enhance the scientific, technical, artistic and humanistic communication by UPC teaching and research staff via the Internet.

FènixDoc is an Internet portal that links the material published by lecturers (journal articles, speeches given at conferences, etc.) that is referenced on the UPC research database to the full versions, whether the publication is subscribed to or is freely available on the Internet. If only the printed version is available, the interface provides information on locating the document via the UPC library catalogue.

FènixDoc has been very well received by the teaching staff because it enables them to display all their published work and guarantees access to full-text versions.

Research depository

The research repository aims to provide access to the work of UPC research groups. The material is collected, organised and stored in the repository with no restrictions on access rights, so it can be shared with other researchers working within a specific field.

The following types of documents may be stored in the repository: research reports, pre-prints and post-prints. The Dublin Core and additional administrative metadata are used to label documents, following the specifications set out by the CBUC. Research reports and other e-prints are filed by teaching staff via an automated system. The repository has permanent accumulative open access and allows different levels of visualisation.

The system is managed by Dspace software. It is structured around the University's research communities, and allows each community to customise the contents. They can include a description of their research, their logo and the structure of their collections.

Each research community receives support from a subject specialist librarian who informs and provides advice on the internal organisation of the collections in the depository, provides advice on publishing rules and copyright, reviews/updates the metadata and provides support for filing documents in the depository. Although this project has not been up and running for long, it is hoped that work will have started on five research communities by the end of the year.

New library services

UPC observatory of scientific publications

The University Library regularly draws up and publishes a document entitled "UPC observatory of scientific publications". The aim of this observatory is to carry out comparative studies of the state of research at the Technical University Catalonia in relation to that of the other Spanish technical universities and other European universities that undertake research in the same scientific areas.

First, the University's overall research results are presented and then information is provided on scientific output in the University's main subject areas: physics, chemistry, engineering, materials science, IT and mathematics. However, data referring to architecture and urban planning are not included, as the sources of information used (Journal Citation Report and Third European Report on Science and Technology) do not offer results in these areas. As points of reference, the report uses the European institutions that are members of Cluster and the main Spanish research institutions.

The University Library also provides the Vice-Rectorate of Research with the support services detailed below. Architecture and urban planning journals are not considered in the Journal Citation Report, UPC's main tool when it comes to evaluating the scientific material published by the teaching staff. To fill this gap, the University's Board of Governors placed research managers in charge of drawing up a list of journals in the relevant fields, including details such as the ISSN and place of publication, and indications of their quality, such as their inclusion in peer reviewed journals, API and Avery databases and prestigious library collections such as those at MIT, Harvard and Delft. Those subject specialist librarians whose fields are architecture and urban planning took part in this bibliometric study, which has now been presented to the University's governing bodies. It presents a system of points similar to that used for journals cited in the JCR. This contribution has solved a problem that the institution had when it came to evaluating architects and urban planners.

UPC's Intellectual Property Service (SEPI)

It was set up in January 2005 and its members are library staff. The main objective of the Service is to provide information and guidance to the members of the university community on the basic principles of copyright rules and regulations, especially with regard to the information that is made available to them via the UPC library services.

There is clearly a need for guidance on the subject of copyright, as well as answers to some of the doubts that currently exist about the use of scientific and technical information: basic guidelines on copyright legislation and the uses members of the university community are allowed to make of the information available on Bibliotècnica, UPC's digital library.

The service is complemented by other UPC services, such as the Legal Office (legal advice), the Technology Transfer Centre (industrial property) and Edicions UPC (which deals with the copyright for the material it publishes).

It is important to emphasise that the Service provides general guidance and makes the necessary documents available (regulations, jurisprudence, protocol, etc.) with regards to copyright, but it does not provide legal advice.

CONCLUSIONS

The objectives set out in UPC's 2005-2010 Plan for Research, Development and Innovation aim to increase the quantity and quality of research, development and innovation endeavours at UPC, in order to become one of the top ten technical universities in Europe.

UPC's libraries have worked hard to adapt the services they offer to the requirements of the *European Higher Education Area* and are proving that they can offer innovative and high-quality learning support services. They must, however, strive to demonstrate their capacity for active cooperation in the University's commitment to raising the standard for its research. The "Libraries and Research" section of the UPC Library's current strategic plan emphasises the aim of "reinforcing the Library's role as a supplier of information resources for research and the creation of knowledge at UPC, making information one of the key elements in the field of research."

This paper gives an overview of some of the initiatives undertaken by UPC's libraries. These initiatives focus on aspects such as access to quality scientific information, the dissemination of the Open Access movement, support for information management, the dissemination of the University's scientific output, advice regarding legal protection for the information generated by the scientific community and also the dissemination of the results of the University's research, as a means of providing the encouragement that the University wants to give its staff to publish more and in the best journals.

In the coming years it is hoped that that these services will become consolidated. We are aware that this is a considerable challenge that requires much work and dedication, and above all it requires the support of a University committed to research.

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