Revaluing and making tangible the resources for information and scientific editing in Argentina: lines of work and perspectives from the Center of Scientific and Technological Information of CONICET

Revalorización y tangibilización de los recursos en información y edición científica en Argentina: líneas de trabajo y perspectivas del Centro de Información Científica y Tecnológica del CONICET

Bosch, Mela[1]

The aim of the Argentine Center of Scientific and Technological Information (CAICYT) [*Centro Argentino de Información Científica y Tecnológica*] of the National Scientific and Technical Research Council (CONICET) [*Consejo Nacional de Investigaciones Científicas y Técnicas*] is to contribute to the understanding of the development, evolution and transmission of knowledge through research on information published in the fields of science and technology. It also contributes to the organization of and access to scientific and technological information and to the quality of its distribution in nationwide publications. In short, we set out to organize information for research and innovation and, at the same time, we support and promote Argentine editorial activity in the fields of science and technology.

In these years of intensive use of technology, we face a scenario in which information is treated as a commodity, as commercial merchandise, as a massively produced good whose value is determined by the demand and supply model, regardless of who produces it or where it is produced.

For those of us who are part of the community of actors participating in the production of scientific information, coming out from under such pressure is a challenge that requires us to become developers of diverse abilities that cannot be transformed into commodities. This strategy is based on influencing the value chain with better quality.

As an institution, this goal leads us to look into the past and into the future: CAICYT was born in 1958 as the library of CONICET; in 1976 it became a center of documentary services and more, recently, a research unit. This progress presents us a promising horizon and, at the same time, obliges us to emphasize the treatment of information as a social product implemented in services to the community that are highly differentiated according to the type of user.

For that reason we have to individualize the actors related to scientific information in Argentina, recognizing them as part of several groups: those that make decisions within the Argentine scientific system, such as the management of CONICET and authorities at universities and institutions connected with researchin science and technology; information specialists, librarians, documentarians, either in the CONICET's library system or in other institutions and companies interested in scientific and technological development; editors of scientific journals; and, in connection with the latter, the authors and researchers for whom scientific information is the object of or input for their work.

Considering these groups that are in step with the technological trends of the time, our institution has been developing services organized as references and indexes in order to assemble the national

[1]Professor of Literature. Master's Candidate in Software Engineering, Specialization in Documentary Management. Director, Center of Scientific and Technological Information, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina. mbosch@caicyt.gov.ar

scientific and technological production, such as the Collective Catalogue of Periodical Publications [*Catálogo Colectivo de Publicaciones Periódicas*] and the Guide to Information Units in Science and Technology [*Guía de Unidades de Información en Ciencia y Tecnología*].

Also for reference and identification purposes, CAICYT has been the ISSN National Center for Argentina since 1974 and is in charge of the individuation of all printed publications and continuous resources that are released in Argentina, with the assignation of the ISSN code and registration in the database of this international system.

In the last few years we have increased the offer of substantive content in open access: since 2006, CAICYT has centralized the participation of Argentina in SciELO (Scientific Electronic Library Online), a virtual network made up of collections of scientific journals from Latin American countries, Spain, Portugal and South Africa with full text in free and open access. SciELO uses programs and methods of preparation, storage, dissemination and evaluation of online scientific publications using integrated processes to measure the use and impact that scientific publications have.

The journals that make up the SciELO Argentina collection are selected based on editorial and content criteria through a selection process that determines the Basic Nucleus of Argentine Scientific Publications [*Núcleo Básico de Publicaciones Científicas Argentinas*]. It is a project of the CONICET that identifies and distinguishes a set of Argentine scientific and technological publications related to different areas of knowledge. The prospective journals undergo a thorough evaluation, in which quality and importance criteria are applied. The evaluation is carried out by a Committee appointed by the Board of Directors of CONICET, formed by highly prestigious investigators, technologists, editors or university professors that evenly represent the different areas of knowledge. The Committee is in charge of evaluating the journals that are to be included in the Basic Nucleus, and then reassesses them every three years to certify their continued participation in the project. CAICYT is the organizing and contact home for this selection process. The editorial support given by the Scientific and Technological Publications Portal (PPCT) [*Portal de Publicaciones Científicas y Tecnológicas*] serves as a complementary service of the CAICYT and also as a starting point for digital publication.

As mentioned before, this scenario imposes upon us the task of intensifying the creation of differentiated abilities related to information that cannot be transformed into commodities. We propose unifying our technological offerings and related information in a single place online: the Support Platform for Argentine Scientific and Technological Communication, (PACCTA) [*Plataforma de Apoyo a la Comunicación Cientifica y Tecnológica Argentina*], made up of functional modalities with resources and channels that are operative among applications (web services) and that are oriented towards both people – information managers, authors, editors and documentarians – as well as automated agents.

Each of these functional modalities is aimed at different levels of use: beginners, operative users and specialists in every field. So, for instance, in the case of scientific editing, an initial user is an editor who publishes his or her first scientific journal; an operative user is one that already has experience in the publication of journals but that desires to place the journal's production within national, regional and international systems; and specialists are actors that contribute to guidelines and norms at local, regional and international levels.

This development model has a unifying role from the user's perspective, maintaining a variety of services without modifying the features required for processing; that is to say, without changing the programs that support these services, it facilitates an intuitive, grouped and channeled access depending on the services used.

Besides this easy access, a fundamental goal of this platform is to strengthen the technical skills of users, as highlighted above: reinforcing the abilities of editors in the initial stages of the editing process while at the same time promoting the quality and rigor in editorial practices required internationally.

The system also allows us to provide support to the producers of information, the authors, in aspects of communication specific to the scientific and technological field. The platform can orient researchers regarding internationally accepted standards of quality for scientific publications.

In addition, we seek to support, in all normative aspects of description and documentary analysis, libraries, databases and specialized repositories, as well asto deepen the knowledge of new trends regarding information and scientific and technological editing.

From this broad panorama we have presented of the PACCTA, the following four *focal points of motivation and services* can be derived:

1. *Support for the management of scientific and technological communication*: this entails the availability of operational services as an aid, for example, the handling of citations, as well as tutorials and self-training materials.

2. *Consolidation of information infrastructures*: this has to do with the uniform and persistent availability of stable description structures (metadata) and appropriate denomination instruments (lists of values, controlled lexicon, thesauruses, ontologies) which will allow the CONICET to express its lines of research and scientific action in a consistent way and at the same time facilitate dialogue with scientific agendas at a global level.

3. *Promotion of exhibition environments of scientific and technological communication*: this relates to supplying technical mediums in accordance with current models of exhibition and distribution of publications within the global scientific community. Technical mediums of allocation of metadata are provided to digitalize resources, as well as to provide for their persistence in repositories and in the development of flows of documents that are non-redundant, significant and reusable.

4. *Support the creation of instruments of self-knowledge of the scientific system*: this means encouraging the development of useful parameters to characterize the formalized production in the areas of science and technology. This line of work is oriented at providing instruments necessary to make decisions and to make use of models that facilitate conditions of comparison among the actors in the field of science over the course of time.

Taking these focal points into consideration, we are making progress towards the development of the following *specific components* of PACCTA:

▪ *Support service in the production cycle of scientific publications*: These are services for monitoring and training included in the PPCT. The portal provides a temporary service as a starting point that possesses the technological and operative infrastructure necessary to facilitate the electronic editing of Argentine scientific journals of quality, in open access and free of charge, in full text and without legal restrictions. It is aimed at supporting editors of Argentine scientific publications that, in an initial stage of editing and publication of their journal, decide to obtain assistance and guidance from the CAICYT-CONICET staff to manage online the processes of submission, evaluation, editing and electronic publication and thus reach and strengthen levels of quality based on international standards.

▪ *Bank of standards, parameters and norms of scientific and technological communication*: the aim here is to gather in one search site the instruments that explain the best practices and regulations for the life cycle and editorial quality at an international level, as well as a tutorial service accompanying the hypertextual markup of digital publications that meets international standards. It includes services of validation of technical regulations on bibliographic citations, among others. It also includes a Continuous Survey on Editorial Policies used to collect and disseminate essential information necessary to make decisions related to publication policies such as: the rights that authors have regarding an article, paper, chapter or book published by an Argentine editor.

▪ *Semantic bank*: it provides the infrastructure for the development of services of content description that are necessary to the processes of representation and exchange of scientific and technological knowledge. This semantic bank makes the production, transmission, treatment and management of specialized knowledge easier. It serves to structure, formalize and expose services based on a controlled lexicon with the purpose of facilitating its use and reuse through searches, downloads and/or use of semantic web services, so that each actor can develop the models and dynamics of

use that they consider appropriate based on their tasks, functions or contexts. In particular, the semantic bank develops support services for the thematic classification of resources, supplying in an intuitive and simple way lists of descriptors of thesauruses, taxonomies, glossaries and ontologies. In this way, it supports the thematic classification of publications in the indexation and production stages.

- *Catalogue of the Basic Nucleus of Argentine Scientific Journals [Repertorio del Núcleo Básico de Revistas Científicas Argentinas]*: it gathers the presentation, description and electronic history of the journals that are part of what is considered the fundamental scientific journals produced in Argentina. In addition, those publications that wish to be included in the catalogue can registerand then monitor electronically their process. Moreover, it will offer metrics regarding the production cycles, the average number of articles published annually, the diversity of authors, and external citations, among others.

- *Roster of Argentine editors of journals registered in the ISSN National Center of Argentina*: it is an updated list containing information on the people who publishin the fields of science and technology in Argentina. We propose making this information that the CAICYT has collected over time visible, within the general policy of transparency, promoting conditions of replication and strategies that benefit the development of conditions of comparison and differentiation among actors.

- *Service of reports and monitoring of the indexation of Argentine scientific journals*: it is a tool that identifies the production of articles within the indexation systems – Web of Science, SCOPUS, SciELO are among the most important – and allows the users to identify, in real time, all published articles by author, source, key words and date. This service provides the basic information to carry out bibliometric studies in different contexts.

- Progress in the analysis and development of a portal for scientific electronic books will also be made: to this purpose, in October we brought together editors of scientific and technical books, who are part of commercial, university and institutional publishing houses and organized a conference on electronic books as a challenge and as an opportunity for scientific editing. The objective of this conference was to analyze the current alternatives for the development of electronic platforms for scientific and academic books, and to consider aspects of sustainability and editorial quality, with the purpose of developing a project that would receive the support of the CONICET.

- We have also developed a catalogue of book titles that have been acquired by CONICET and have improved our support for data repositories.

Another line of work that completes and supplements the PACCTA are the *training opportunities* already in process. This offering covers topics oriented towards its protagonists. In the case of librarians and documentarians, training in scientific information covers themes such asmetadata schemes for the formal and semantic description, information recovery, and aspects of measurement and impact of information behavior, among others. At the same time we offer training in editorial planning, digital editing, layouts and management to editors and students of editing. We also take into account cross-curricular topics such as legal and technical regulations. Other esteemed beneficiaries of our training are authors and researchers. We focus on *scientific communication practices*, that is, on the development of scientific texts, presentation of images and statistics that illustrate them and, especially, the citation of documentary sources. Such global authorial management of scientific contents involves aspects of scientific writing and related communicational strategies.
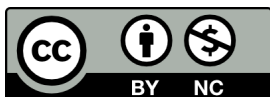
Apart from the development of resources regarding access and editing support, catalogues and training, we have started the sustained and more extensive development of lines of research on our bibliographic production, about methodologies of conceptual analysis and the development of repositories and documents and data storage.

The current institutional mission of CAICYT is to take part and collaborate in the revaluing of resources on information and scientific editing in Argentina by making these resources tangible.

To highlight this importance in the form of a collaborative construction, we are committed to bringing to light all the attributes and benefits of our services, to show ourselves as a stable and consistent reference in these topics, to be recognized by our name, to extend our services with complementary goods and, finally, to be the foundation of a resource infrastructure based in people – professionals open to the community, possessing quality and social responsibility.