

# New publishing and scientific communication ways: Electronic edition, digital educational resources

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## ABSTRACT<sup>1</sup>

The scientific edition has undergone a profound transformation in the last years. The production of research results from big data techniques, the accessibility to them through open access systems and repositories, the appearance of digital tools for editing and organization of content, etc. are some of the elements that have introduced changes in the systems of scientific communication. This Track analyzes some of the problems posed by these movements by providing models and solutions for them

## Keywords

Academic book; Scientific Monographs; Evaluation; Open Acces; Cloud Computing; Information Literacy.

These last years have witnessed profound transformations in the processes of scientific communication. They have changed the ways of producing, distributing and consuming scientific information. Researchers have become increasingly involved in movements that have facilitated the accessibility, availability and openness of their research results. Models have been articulated so that the main source of information, scientific journals, databases, publishing sites, etc. promote the integration of the different members of the scientific communication circuit. Results measurement systems, traditional metrics, have been perfecting and increasing their performance, enriched with alternative indicators that have improved the perception of the real impact of the research works

Researchers have acquired work routines in which open access is already a variable that has been taken into consideration in almost all forms of publication. The digital, on the other hand, represents a volume with a tendency to exponential growth, in such a way, that the scientific monographs are gaining a significant importance in the electronic environment, as before had made the magazines and other forms of publication. They have also gone, diversifying, acquiring ever more undifferentiated profiles, in which books are getting closer to magazines, and these, in their monographic orientations to those. Institutional repositories and other forms of document registration have also been included in the road map of all public and private initiatives, so that the world's leading research centers have developed in one way or another some system of conservation of its production, accessible to the entire scientific community.

Around some of these topics are presented the communications of the Teem of 2017, deepening as much in the problems and challenges of these sectors of the scientific communication as in its solutions.

**Néstor Darío Duque Méndez, Mauricio Giraldo Ocampo and Fernando Moreira** propose in their communication, Storage scheme for analysis of academic data and interaction of students with virtual education platforms, a system for the study of the interactions of students in platforms of virtual education, as well as for the storage of academic data combining a relational and

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multidimensional scheme, in order to facilitate the obtaining of information about learning activities.

**Antonio Jose Rodrigues Neto, Maria Manuel Borges and Licinio Roque**, start from the principle that increasing growth and access to digital information in the field of Open Science requires greater political and technological consistency in all the systems that support it. On the other hand, digital repositories also require special attention to preservation policies and conceptual models. That is, preservation policies and conceptual models are needed to specify the requirements of digital repositories. In the communication presented, Preliminary study on the applicability of a service-oriented architecture in the OAIS model implementation, it is conceptualized of the model OAIS, its entities and characteristics in the scope of the digital preservation and, additionally, the potential challenges are analyzed related to the lack of consistency and interoperability that may be present in different software implementations based on the OAIS model.

In a similar vein, it is considered the outstanding initiative of a model in the cloud for European science (The European Open Science Cloud) as a way of providing accommodation and accessibility to the research data of the main European institutions. Taking as reference the 2020 horizon.

The motivation for the creation of the European Open Science Cloud (EOSC) is to provide computer support and data storage so that research institutions in the European Union can develop their activities in science, technology and innovation. The European Commission launched the Europe 2020 Strategy in 2010 to address the transformation of Europe and the world since the beginning of the 21st century. The main objective of the strategy was to prepare the European Community for the major challenges of the decade and, among the various development and innovation actions, to create also an infrastructure in the hybrid or federalized model that would satisfy the IT needs of these institutions linked to the science and research.

**Arioaldo Veiga de Almeida, Maria Manuel Borges and Licinio Roque** present in their communication, The European Open Science Cloud: A New Challenge for Europe, the main characteristics that are part of the concepts of cloud computing, as well as consolidation and dynamic use of shared computing resources, concluding that the creation of cloud computing infrastructures for scientific research in the European Union is a strategic necessity for the region and that many technical and social challenges must be considered for its implementation, the latter being the most relevant to the current scenario.

The cultural heritage was revalued thanks to the progressive digitalization of the same, which has increased its availability and visibility. At the same time this

transparency of resources has facilitated the research tasks of all those interested in the heritage of the past and its future projections. In this sense, archives in general and municipal archives in particular have played a crucial role in making a very large contingent of local heritage restricted to a very limited environment accessible. **Cristiana Freitas, Maria Manuel Borges and Jorge Revez** develop a case study, that of the Portuguese municipal archives proposing a model of resource utilization in an open connection between digital objects and local entities. His communication, Archives' call to Digital Humanities: a case study of Portuguese Municipal Archives, constitutes an excellent roadmap on the way forward in the intervention to make information visible in this type of centers.

Digital researchers will benefit from these resources as long as they have the necessary skills to use the full range of tools that new technologies have made available to scientists of all kinds for effective use of the data they manage. Digital training, literacy in many cases, becomes an essential condition for any researcher who wants to develop initiatives of this nature in any field of knowledge. But it is especially indicated in the biomedical sector, in which the diversity and wealth of available tools is increasingly important. **Antonia María Fernández-Luque, José Antonio Cordón García and Raquel Gómez Díaz**, present the central role played by the information professional in these training processes, focusing the analysis on a literacy model developed among specialists in the health sector. Their communication. Digital competences in the curriculum of postgraduate studies of health professionals. The role of the trainer in formative programs, raises the need to articulate compulsory educational programs for a correct and efficient development of the professional tasks by the workers of this sector.

Finally, **José Antonio Cordón-García, Raquel Gómez Díaz, Araceli García Rodriguez** and other members of the Electra research group are discussing the problem of scientific monographs in the field of the evaluation of scientific production. The scientific monographs are a paradigmatic case of the changes that electronic publishing and the digital environment has been introducing in recent years in the circuit of scientific communication. On the one hand, its importance in the fields of Social Sciences and Humanities tends to shift to other forms of representation, mainly research articles, and on the other, its visibility is increasingly conditioned by factors inherent in the digital environment. Based on these assumptions, a study is presented on the context of scientific monographs in the systems of valuation and institutional accreditation of research, taking into account as referring the research requirements established for the accreditation to the different faculty figures and the ones for the obtaining of accreditations.