

**INSTITUTE OF APPLIED RESEARCH IN SUSTAINABLE ECONOMIC
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OPEN ACCESS TO SCIENTIFIC PUBLICATIONS

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As mercantilism (1450-1750) and the Industrial Revolution, from the second half of the 18th century, boosted the world economy. In the 21st century is the time of knowledge and your access will continue to give this impulsion. Thus, the access to knowledge becomes imperative condition to promote not only economic growth, but the development.

Scientific knowledge disseminated through articles, papers, dissertations and theses circulate in renowned magazines, these in turn are properties of large publishers. *"The scientific publication will continue for a long time in the hands of large publishers, but they will gradually find a hybrid formula of publication, because I realized that the issue of lit open is irreversible"*. It is the opinion of Sely Maria de Souza Costa, Professor of the College of Information Science at the University of Brasilia (UnB).

The path, although irreversible, is tortuous, but attempts to pursue him multiply and have promising results. The Brazil is present in this process. Created in 1997, the electronic library SciELO brings together a collection of more than 200 Brazilian open access publications from all fields of knowledge, whose articles can be downloaded from the internet, open and free.

The SciELO preceded in six years the movement of open access be triggered. She is a special program of FAPESP launched to increase the visibility of Brazilian scientific publications, until the last century, were sparsely indexed in international databases.

Another Brazilian initiative was the creation, in 2013, the Repository of Scientific Production of the Council of Rectors of São Paulo Universities, the Cruesp (www.cruesp.sibi.usp.br), which already has more than 400,000 records of articles, theses and dissertations and other scientific works, and the University of São Paulo (USP) has 48.68% of the heap, the University of Campinas (Unicamp) has 28.96% and the University Paulista (Unesp) has 22.35%.

This repository can be accessed through a common search tool, states Maria Crestana, coordinator of the Integrated Library System (Sibi). The repository was created on the initiative and with the support of FAPESP, which instituted a policy of publications of results of scientific research funded with public resources in open access. The records currently available comprise, mainly, the theses, dissertations and scientific articles published in the last ten years, when universities started offering this type of production in digital form.

The European Union launched in early 2000 a movement aiming to give open access to scientific production. Recently made the decision to make available, from 2020 and free all the papers produced in its Member States. It is estimated that only one in four new articles being published today that scheme – the other, at the time they are published, can only be accessed by subscribers or users who accept to pay for the download. However, the betting around the open access model will gain more momentum are divided.

The experience of the United Kingdom, who began to adopt in 2014 a strategy involving the research produced at 107 institutions linked to its Research Councils (RCUK), gave strength called golden road, in which the own scientific journals provide free access to the content that they publish, they charge more expensive than author, exempting the user to pay for the download. Although there is consensus on the benefits of open access in the United Kingdom, the financial challenges persist, is that claims Adam Tickell, Vice-Chancellor of the University of Birmingham.

In Spain, since 2009, 11 major universities require the scientific production of its researchers is published in open access, the called green road. It is a model in which each researcher files in the database of your institution a copy of their scientific papers published in journals, which are available to the public. Many publishers accept this procedure after an embargo period, generally six months at least. Others charge an extra value to release the embargo.

The debate on trends is open. Both the Golden route as green are acceptable, however, open access has had difficulty to move with more speed because two forces act as a balance, this is the vision of the teacher Sely Maria de Souza Costa. *"One of them are the publishers, which charge expensive to publish good scientific articles. They have been bent to pressure, but getting their business. The other is a large portion of the authors, who still prefer to publish in magazines of greatest impact and do not care if the article will have restricted access. They seek the prestige of journals, although the prestige belongs to themselves. Magazines do not produce knowledge, only the market "*.

Open access to be successful need support from the authors. Quote itself the example occurred in the United States. The Publisher Elsevier, the largest publisher of medical and scientific literature in the world, was the target in 2012, a campaign against your position in support of USA Senate that sought to reverse the policy created by the National Institutes of Health (NIH), according to which all research supported by these institutions began to be offered in open access. Prestigious scientists, among them three mathematicians winners of the Fields Medal, called for a boycott of Publisher, which ended up backing off from support for the project.

Another difficulty in creating a model prevalent is that each discipline field has a peculiar demand involving the publication of knowledge. *"The model of Physics is probably not applicable to Philosophy. There are cultural issues related to the ethos of each discipline that should be washed in account "*, says Sely. Knowledge in Physics, she observes, is shared in open access repositories such as ArXiv since year 1990 and quickly discussed by researchers from various countries. *"The generation of knowledge in Physics is of universal interest and must flow quickly discussed by researchers from various countries. Already in Philosophy and other areas of the Humanities and Social Sciences knowledge construction is slower and often generates more than regional interest. The demand in this case is to provide knowledge in an institution repository "*, says the professor.

This same condition of the Humanities and Social Sciences happen with the Agrarian Sciences. Only in the Agrarian Sciences the field of application is much wider than its congeners here cited, since agriculture is spread in the world in two major latitudes: between the tropics and beyond the tropics. In other words: agriculture in hot weather and temperate climate.

How open access is irreversible by the dynamics of the development of the 21st century, based on knowledge, the editors begin to seek a *modus operandi* in this new

situation. The Publisher Elsevier announced the purchase of the Social Science Research Network (SSRN), open access repository in which more than 300,000 researchers from Social Sciences and Humanities has already released articles and papers not yet published in magazines or books, preprints. Created in 1994, the SSRN will not charge anything from the authors who lay their jobs nor the readers that download. The recipes come from universities that use the network to promote its scientific production.

The Elsevier, also bought in 2013, Mendeley, social network popular in academia through which is possible to know which articles are being accessed by researchers in a particular area, or the right researcher are reading and recommending to colleagues.

However, the difficulty of predicting the future in the market for scientific publishing derives from a well-known standoff in other segments of the market of communication: not found a formula financing alternative able to compensate for the loss of revenue by offering free information on the internet.

A way, says Jézio Hermani Bansal Gutierre, President of Fundação Editora Unesp, and professor at the Faculty of Philosophy and Science, campus de Marília. *"The Unesp Publishing House has released in recent years, more than 300 University researchers writing books in e-book format, which yielded more than 12,000,000 downloads. The digital portfolio of importance deserves to win University publishers, but the challenge remains to increase the sources of funds "*.

Among the still disputed and the difficulties encountered to the open access to scientific publications, an aspect doesn't deserve doubt: research funded with public resources have to be made available to the company, which has already paid for it, and he deserves to know and be able to transform the knowledge into development.