Dynamic and Topicality in Romanian Scientific Publishing

Sorin-Ciprian TEIUŞAN*, Ioana CĂLEAN**

Abstract

Scientific publishing is the destination of research results. Publications are the receivers of "products" resulted from scientific researches, but they are also incentives for researchers due to the provided informational resources. Thus, scientific journals "trade" information, and researchers are engaged in activities that constantly enrich the scientific fund with "finished products" that afterwards become "raw material" for other researchers during "the scientific cycles of production". As such, scientific publishing is a dynamic phenomenon, and scientific literature is constantly developing. The goal of this paper is to research Romanian scientific publications by conducting dynamic analyses and by providing researchers with new information about national scientific publishing.

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1. Introduction

Scientific publishing is the natural result of researches in scientific areas, the next step taken by the researcher "to free" the results of the research "produced" through their own work. If the scientific research is completed with the achievement of the aimed objectives, with results, with scientific products, with highlighting some truths, then, by publishing, the researcher puts at the disposal of the public the results of his research, he "trades" the products of scientific activities, he shares the identified truths with those who are interested. Any scientific research completed with results corresponding to the initial objectives enunciated at the beginning of the examining actions is useless if its result is not made public, if it isn't released into the capital of universal scientific literature. The point of launching scientific results in scientific environments is to allow the approval of the members of the academic and research community and to use them as a source for future directions of development, or, conversely, to get disapproving opinions that will also determine favourable scientific developments.

The logical thread of our scientific approach makes the journey from debates about scientific research and continues in the same manner with scientific production, scientific publishing and scientific literature. The objectives of the paper are represented by researches about Romanian scientific publishing, materialized, on one hand, in analyses regarding the dynamic of national scientific publications in order to make assessments about the developments of scientific publishing, and, on the other hand, in examinations of the current situation determined by the changes occurred at the level of the assessment and accreditation body of scientific journals and by the developments towards achieving a database of the scientific production in Romania, under the impact of computer technologies.

In terms of composition, the paper is structured as follows: after addressing the relationship between scientific research and scientific production in Section 2, we continue with discussions about scientific publishing and scientific literature in Section 3. Section 4 contains the analyses about the dynamic of Romanian scientific journals, followed by a debate regarding the current state of Romanian scientific publishing in Section 5. At the end, we draw conclusions regarding national scientific publishing and Romanian scientific journals.

2. Scientific research and scientific production

The terms "scientific research" or "fundamental scientific research" or "research" are used to "refer to the organized cognitive activity of society that results in discoveries of adequate representations of reality, disseminated at the level of society, meaning published" [12].

At any level and regardless of the experience gained during activities, researchers produce different results through the conducted scientific research. The final results of research, which include the achievement of the aimed objectives, should be brought to the attention of experts, being disseminated in scientific environments through scientific communications, published articles or studies because, "following the scientific research activity, the "seeking" and "finding" of the truth, the researcher is directly and
personally responsible of exploiting it. Any truth resulted from an activity of scientific research should be supported, defended and promoted. It should be imposed in that area of science, it should be accepted by experts and used in daily practice” [4].

Man has a multitude of necessities, of needs. The needinesses experienced by the individual or by a community constitute the initial fundamental impulse because they set people in motion. People’s expectations are the starting point of any human activity, but also the reason to continuously resume productive activities, and the satisfaction of needs is the final purpose of human activity, of production.

Generally speaking, on one hand, production is “the process of creating the goods necessary for the existence and development of society in which people transform or change objects in nature according to their needs” and, on the other hand, production is “the aggregate of products obtained at work during a determined period of time, in a certain sector of social activity, etc.” [3]. Production is “a work, a literary, scientific or artistic writing” [3]. Depending on the characteristics of the final results of production, one can speak of the production of goods, of material production, of services, but also about production of information and scientific production.

People act and get involved in scientific research due to needs for knowledge, for science development, for progress. The activity of scientific production creates scientific products. The finished products of scientific research are scientific papers. According to Vlada [10], scientific papers are assorted according to different principles: content, originality, destination, scope, etc. Vlada specifies the following types of scientific papers (edited as full paper): original article, teaching article, study, scientific journal, popular journal, proceedings, book/monograph, doctoral thesis, dissertation thesis, graduation thesis [31].

"The scientific product, regardless of the shape it takes, should be launched on the market where the demand and supply of research information are facing each other in order to fulfill the mission for which it was created and in order to satisfy the needs of various users through its features and fulfilled functions, being acquired for practical use under this shape or, on the contrary, being acquired as raw material or semi-finished product for the conceptual or practical exploitation cycle of research in order to obtain own achievements“ [8]. Consequently, for future scientific research, the results obtained by researchers through investigations, received as “finished products”, will take for the same or other researchers the shape of “production in progress” or “raw materials”.

There is a closely conditional relationship between scientific research and scientific production. Thus, scientific research leads to scientific production, and scientific production leads to new scientific researches, the results determining new “scientific cycles of production”. Researchers interested in making scientific discoveries acquire the producers status through the obtained scientific products.

“Scientific production is an important indicator of the development level of a country and is currently closely monitored by the Institute for Scientific Information (ISI) in Philadelphia, USA. Such an operation is difficult and complicated and can’t be completed”. Scientific production is monitored by countries, cities, institutions and authors and is published in the Science Citation Index (SCI). There is an annual geographical index of publications by country and institution [7].

3. Scientific publishing and scientific literature

“The main goal of research is acquiring scientific knowledge, with immeasurable benefits for human culture and civilization. It’s important to store this knowledge within institutionalized scientific literature in order to find and efficiently use the various knowledge acquired over time” [9].

"The fundamental research is the result of scientific curiosity ("curiosity – driven") and it produces new knowledge. The knowledge is published in scientific journals that fill kilometres of shelves in modern libraries. A large part of the published scientific papers are not read by anyone, much less quoted or used by anyone. But some of the results of these “pure” researches give rise to spectacular applications, which have huge commercial success and which contribute to the quality of modern life. Computers, plastics and many other examples can demonstrate that investigations started by mere curiosity of researchers have taken the difficult journey that includes the following stages: fundamental research – applied research – design – engineering – commercial product, with great economic success. In conclusion, the fundamental research is primarily a source of knowledge. Scientific knowledge becomes part of useful knowledge, which is transformed in applications and leads to industrial development“ [6]. The result of the fundamental research is “a general model about how the surrounding world is made and evolves. The model can be enunciated in reference publications called primary publications and resumed and explained through a less formal language in other publications that quote the primary publications. The model of the world aims to formulate predictions regarding the evolution of various aspects of nature and society. Modern society adapts to reality based on these predictions” [12].

According to Coteanu et al. [3], publishing means “the action of publishing and its result; printing, issuing”, and to publish means "to appraise something through printing, displaying, etc.; issuing, printing books, articles, information, etc.". According to the same sources, the publication is "the act of publishing; what is printed, displayed; (especially) periodical issues“ [3]. For Dolea and Helernea, the periodical publication is “a publication in any media, consisting of successive parts, numbered and chronologically ordered, intended to
be issued for an indefinite period of time. Examples: magazines, newspapers, journals, series, yearbooks, proceedings of conferences and congresses”. “In Romanian, the term magazine includes scientific journal, as well as glossy magazines (known in other countries as magazines). Journals are periodic publications dedicated to a field and aimed at research and learning” [5].

Scientific publishing generates scientific literature. The results of scientific researches that see the light of print enrich scientific literature with each new issue. For Vlada [10], science is “a generator of knowledge obtained through the activity of scientists that add to the common pool of science new knowledge, new discoveries, revisions of old knowledge, achieving in this manner a permanent development of science”. “Scientific literature is essentially composed of books (especially treaties and monographs), articles published in journals, research reports, proceedings of scientific conferences, doctoral theses, patents, research grants (associated scientific reports) etc” [9]. This is “a way to store the results of scientific research in order to efficiently find, use and process knowledge over time. Today, scientific literature is stored in print, online, in digital libraries, on magnetic and optical media etc” [10].

4. Analyses of the dynamics of Romanian scientific journals

Preceding the analysis of the numeric evolution of Romanian scientific journals in the inventory of National Council for Scientific Research in Higher-Education and the debate about the obtained results, we believe it’s appropriate to discuss first about the beginnings of Romanian and global scientific literature. When was the first scientific publication published in Romania? When was the first scientific publication published in the world? When were the first national scientific journals edited? These questions determine us to mention the following historic information as answers:

- In 1665, the first scientific publication is issued in France - "Journal des savantes" [5];
- On January 1st/January 13, 1875, out of the need and desire of medical students in Bucharest to support each other, to behave scientifically in an organized framework, but especially out of the need for scientific documentation in a time when Romanian medical literature was at its inception, and state libraries and the library of the Faculty of Medicine (founded in 1869, 12 years after the setting-up of the first scientific society of doctors in Bucharest – the Scientific Medical Society - 1857) did not have the medical books and journals needed by future doctors, a group of students led by Nicolae Manolescu founded the Bucharest Medical Students Society (SSM or SSMB). In January 1881, the Society’s members edit the first number of the journal “Hospital”, a monthly journal of scientific proceedings, distributed by subscription. “It was the first scientific journal published in Romania”. Being responsible for the publishing of the oldest Romanian scientific publication, the Bucharest Medical Students Society ceases activity during the Second World War, and is re-established on January 1st, 1990, its members putting in considerable effort to continue the Society’s traditions, re-editing the “Hospital” journal for a while. In terms of the scientific production of the Bucharest Medical Students Society, it can be noted that if during the first three years, the highest number of scientific proceedings was 10 in 1876, after 1878, it gradually increased, reaching 33 scientific proceedings in 1882 and 81 in 1899 [37];
- On January 15, 1883, the first number of “Scientific Recreati ons” is published in Iaşi, a journal that was published monthly for six years. “It is the first journal in the country with a scientific profile, the published materials covering various areas of science: mathematics, physics, chemistry, mineralogy, geography, astronomy, cosmography”. At http://www.recreatiisintifice.ro/, the following is written: “We believe we drew the first furrow that leads to original works. The furrow is small and narrow, but it’s there!”. The journal was mainly aimed at pupils in secondary schools, at students and teachers. Most founders were licensed in mathematics or taught this discipline. An issue had an average of 25 pages, and only in the second, fifth and sixth year, issues 7 and 8 (during the summer) were printed together as one journal of 40 pages. The basic structure of an issue was: articles, solved exercises and proposed exercises [32].

From the first editorial issues of autochthonous scientific publications, new journals have kept emerging in various fields of scientific research. In over a century of scientific publishing, with journals that had shorter or longer life-spans, printed or online, issued monthly, quarterly, biannually or annually, written in Romanian or, more recently, in an international auxiliary language, reviewed by Romanian or foreign experts, with editors concerned to constantly improve the scientific level of papers that receive “green light” to be published and concerned with raising the prestige of the journals they manage, each of the journals published by academic publishing houses or edited by a research institute have brought a smaller or bigger contribution to the development of national and international scientific knowledge.

The last decade saw an increase in the number of scientific journals that have been published in Romania. Given this development, there was the need to assort the scientific publications, a systematization that allows researchers to choose their publishing destinations by taking into account the prestige of the journal and the access to the international scientific circuit, which will ensure an optimum use of the research results. In terms of the ranking of the national scientific literature, it’s noted the existence of concerns that aim the development and implementation of a national indexing system for publications. Thus, the National Council for Scientific Research in Higher-Education (CNCSIS), which is an advisory body of the Ministry of Education, Research, Youth and Sports and whose mission is to increase the relevance of scientific research in Romanian universities and the visibility or Romanian science in national and international context, has developed a classification process of scientific journals in Romania [30]. The evaluation and classification process started
in 2005 when CNCSIS introduced the classification categories for Romanian scientific journals ("A", "B", "C", "D"). In 2007, to promote Romanian journals with visibility on the Internet, the subcategory "B+" was introduced, and in 2008 this subcategory became the area of Romanian journals with the index BDI, but which meet all the requirements for category "B" [30]. Currently, there are five categories of journals, divided in two groups, namely:

- Journals acknowledged by CNCSIS starting with 2008, videlicet: category "A" – ISI indexed journals (journals included in Science Citation Index Expanded – SCI-EXPANDED), Social Sciences Citation Index (SSCI) or Arts and Humanities Citation Index (AHCI), category "B+" – BDI indexed journals (international databases) and category "B" – journals with recognition scores.

- Journals without recognition scores, named: category "C" – journals with potential for recognition and category "D" – journals in the CNCSIS database. The placement of a scientific journal in one of these categories was achieved after the assessment of the conditions that must be met, demonstrated by the chart of the journal and of the other pieces in the file submitted to CNCSIS in accordance with the requirements specified by the body that conducts the evaluation, of the set of criteria and of the points’ provisions and of other minimal elements specified online on the official website of the institution. [30].

Between 2011 and 2013, a new methodology of evaluation and classification of Romanian scientific journals will be applied. According to the article "Journal review 2011", for journals included in categories "B" and "B+" during 2008 to 2010, CNCSIS will kept them in this category in 2011 if by February 2nd, 2011, they had filled and sent by e-mail to the contact person, namely the Compartment expert "Science Policy and Scientometry", the chart of the journal and if they had complied at the same time with all the requirements regarding the web page of the journal mentioned in the chart. Following the addition of the information requested in the evaluation chart on the web pages, the reassessment was possible until April 15, 2011, the date of the e-mail that requested the reevaluation and which also mentioned the CNCSIS code of the journal [19].

To analyze the Romanian scientific journals included in the CNCSIS database between 2005 and 2010 by total dynamic and by categories, based on our own processing, we prepared graphic and tabular statements, using the data supplied by the national accreditation body of national journals, posted on the official website of the mentioned institution [30].

By analyzing the dynamics of the total number of national scientific journals included in the CNCSIS database between 2005 and 2010, we notice that the total number of Romanian scientific journals recorded an upward trend during the entire analyzed period (figure 1), from 468 in 2005 to 1011 in 2011, showing that they doubled during the course of 5 years. The most important increases in the number of national scientific publications was achieved in 2006 compared to 2005 (135.9%), followed by 2007 (120.3%) and 2010 (115.5%) compared to the previous years; 2008 and 2009 brought a moderate growth of 6-7% (table 1).

The research of the numerical dynamic of national scientific journals on CNCSIS categories during the period 2005-2010 (figure 2 and table 1) shows:

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- for journals in category "A", a slightly higher level in the first part of the analyzed period (116.7% in 2006 compared to 2005), a more pronounced increase at the end of this part (157.1% in 2007), followed by a publishing "explosion" of ISI indexed journals, expressed through a 390.9% increase in the number of journal in this category in 2008 compared to the previous year; 2008 and 2009 brought a moderate growth of 6-7% (table 1).

- CNCSIS counted in the first year of the category "B+" (2007) 157 scientific journals that complied with the recognition criteria. The following year saw a drop of 15.9% in the "B+" category of scientific journals, followed by significant increases in 2009 compared with 2008 (188.6%) and in 2010 compared to the previous year (165.5%);
- in terms of numbers, the journals in category “B” recorded an upward dynamic in 2006 compared to 2005 (240.3%) and in 2008 compared to the previous year (110.5%), but they also saw decreasing trends in 2007 (60.7%) and in 2009 and 2010 (90.5% in 2009 compared to 2008; 61.0% in 2010 compared to the previous year);

- the journals with recognition potential grouped by CNCSIS in category “C” saw a convex numerical evolution from 164 in 2005 to a maximum of 274 in 2008 and 242 in 2010. The increases range from 16.5% to 19.9%, and decreases range from 4.4% to 7.6%;

- journals in category „D” recorded numerical variations between 200 in the year 2009 to 265 in 2006, with upwards trends in 2006 related to the previous year (117.3%) and in 2010 compared to 2009 (117.5%) and decreasing trends between 2006 and 2009 (99.2% in 2007; 93.5% in 2008, 81.3% in 2009).

The analysis of the dynamics of the numerical structure of Romanian scientific journals included in the CNCSIS database between 2005 and 2010 highlights the changes regarding the share held by each category (figure 3). Thus, if the number of journals included in the database of CNCSIS brought to category “D” the largest share of the total number of journals in the first part of the analyzed period, with a decreasing trend (48.3% in 2005; 41.7% in 2006; 34.4% in 2007), in the following years this position was held by category “C” (33.3% in 2008; 29.9% in 2009) and by category “B+”, which in 2010 exceed all the other categories by having a share of 40.8%, which justified the need for creating this category in 2007 due to the doubling of the number of journals BDI indexed in three years of existence. We have a positive opinion regarding the upward dynamic of the number of journals recognized by CNCSIS at the expense of journals without recognition scores, proving the interest showed for the international promotion of scientific journals and the efforts put in by the editors of the journals to be included in ISI databases.

5. Topicality in Romanian scientific publishig

If until this year the task of reviewing and classifying scientific journals belonged to the National Council for Scientific Research in Higher-Education (CNCSIS), starting with May 2011, the responsibility of accrediting and ranking Romanian scientific journals was granted to a new national advisory body founded on March 1st, 2011 by Order no. 3794 of the Ministry of Education, Research, Youth and Sports [www.cnecs-
ufiscdi.ro] through the reorganization of CNCSIS, the new body being called National Research Council (CNCS) and whose mission is to stimulate excellence in scientific research in Romania and to assist the Ministry of Education, Research, Youth and Sports (MECTS), as well as the National Authority for Scientific Research (ANCS) in coordinating, financing, monitoring and reviewing the scientific research in Romania [19].

At the moment when it was set-up, the CNCS “adopted” 950 scientific journals, reviewed by the predecessor body and ranked as follows:
- 473 journals recognized by CNCSIS, including: 58 journals ISI indexed (category “A”), 385 journals BDI indexed (category “B+”) and 30 journals with recognition scores (category “B”);
- 477 journals without recognition scores, including: 242 with recognition potential (category “C”) and 235 journals included in the CNCSIS database (category “D”) (figure 2).

Responsible of coordinating the review process of journals, the new body elaborated at the beginning of its activity a document entitled “For a new vision of Romanian research”, which explains through two general findings that started from expert analysis “where we are” in terms of research and “where we want to reach” [34]. Noticing a poor presence of Romanian academic journals in the international scientific circuit, the National Research Council is forced to rethink the recognition and ranking of this type of publications, developing a program that monitors the elaboration of a database of academic journals that will reflect the quality of Romanian periodicals and will encourage a natural scientific competitive environment based on review systems used by EU countries and by the European Science Foundation, through an open and continuous dialog with the scientific environment.

Thus, the insufficient relevance of Romanian academic journals in the international scientific circuit entails CNCS to rethink the recognition and ranking of this type of publications, which is why in the document entitled “Recognition and ranking by the CNCS of Romanian academic journals in human sciences. Information package”, available online at http://www.cnsc-ufiscdi.ro/wp-content/uploads/2011/04/Evaluarea-revistelor-dindomeniul-umanist.pdf, is announced the evaluation schedule for 2011. The evaluation and ranking procedure takes into account the continuous submitting of evaluation files and the two times a year evaluation of files [www.cnsc-ufiscdi.ro]. The evaluation files are submitted online by filling the application form and by registering the journal to the online portal http://www.scipio.ro, monitoring the compliance with the other preliminary eligibility conditions. CNCS developed a guide for the online submission of applications for the evaluation of journals aimed at human sciences, available online at http://www.cnsc-ufiscdi.ro/wp-content/uploads/2011/08/ghid_reviste.pdf, which provides useful information to the editors for the authentication and registering of the evaluation application at www.ufiscdi-direct.ro. By mentioning the conditions for recognizing Romanian academic journals in human sciences, CNCS also specified the new classification categories, which are:
1. Category “A” journals (INT) – reference journals for the field, with significant national and international visibility;
2. Category “B” journals (INT - NAT) – journals with high impact in the field, with considerable visibility particularly at national level;
3. Category “C” journals (NAT) – journal with average impact in the field, aimed mainly at the national academic environment.

For inclusion in categories “A” and “B”, the journal should have been published for at least four years and should be included in at least one relevant international database, from EU or OECD countries, the recognition and ranking of journals being granted for at least four years. The evaluation and ranking of journals is conducted by committees of assessors, composed of three experts (from Romania, EU or OECD) for each evaluated file, the members of these committees being selected by CNCS based on scientific performances.

“The scientific publication is the product of the publishing company, irrelevant to it’s field of research. As a general rule, a publications objective is to either address the need for research in a niche field or to become a main-stream leader, gaining a high impact factor and thus attracting many high-profile researchers. From this viewpoint, a publication is the interface though which knowledge is disseminated at a local, national or international level” [1].

The National Council for Scientific Research in Higher-Education – Executive Unit for Financing Higher-Education, Research, Development and Innovation, CNCSIS – UEFISCDI implemented a strategic project funded by the European Social Fund through the Sectoral Operational Program for Human Resources Development, entitled “PhD in Excellence Schools – Quality Assessment of Research in Universities and Increase of Visibility through Scientific Publishing”, which developed the Romanian Editorial Platform SCIPIO – Scientific Publishing & Information Online. This platform is a computerized system for Romanian scientific publications that enables the automation of the editorial process at international standards. The registration process is only at the beginning, but it is estimated that by including CNCSIS journals, categories “A”, “B”, “B+”, in the SCIPIO platform, a complex database of the Romanian scientific production will be created, which will provide support throughout the entire editorial workflow, from the reception of the manuscript to preparing and writing the final draft to printing or publishing it online.
The SCIPIO system aims to implement a portal that revolves around a management application of the process of publishing scientific journals, wishing to obtain a controllable and measurable process that monitors the entire publishing flow, from the reception of a manuscript, to technical assessment and revision, to the final form, to printing or online publishing. The application is available at http://www.scipio.ro, which puts at the disposal of everybody who is interested, editors, subscribed users, etc. a series of useful guides for operating this software, namely: Author’s Guide, Adding a user guide, Editorial guide, Peer review guide, User’s Guide.

The first step for those wishing to use the application is to sign-up on the SCIPIO platform. The available roles for users are: guest, registered user, reviewer, proof-reader, editor, editor-in-chief, DTP, DTP checker. The platform allows: simple and advanced search, navigation in the data structure, reading articles by category or by journal, adding an article to favourites, bookmarking, going on forums, subscribing to the RSS feed of a journal, reviewing an article, but also purchasing an article or subscribing to a journal (www.scipio.ro).

For the researcher, by signing-in, the author has access to all the manuscripts he sent and to all the manuscripts saved as in progress (unfinished materials that allow you to add information for the article and to send it to the editorial staff). After sending the article to the editorial staff, the manuscript goes to the editorial workflow, which involves: receiving the article, assigning the article to an editor, reviewing the article, correcting errors, paginating the article, publishing or refusing to publish the article. The reviewer goes through the manuscripts and after conducting the review, he sends his observations and opinion (positive, negative or conditional) to the editor.

For the editor of a journal, after registering the journal, the most important step is to add the members of the editorial staff, including surname, first name, email, etc., as well as adding the corresponding roles: reviewer, paginators, copy editor, layout editor.

6. Conclusions

The various goals of research, enunciated under the presumption of the problems that “grind” today's humanity, determine the individual or collective human activities needed to achieve them, which allow to identify solutions, to give answers to questions that poke into the world of researchers over and over again, and, in the end, allow a better understanding of reality, which reveals itself continuously to the “eye” of the global scientific environment.

For Zaiț and Spalanzani [11], “scientific research appears as a kind of interface between theory and practice. It is based on a good theory, from which it draw, borrows and uses concepts, rules, procedures or instruments to know reality better, to seek and find solutions, answers or explanations to theoretical or practical problems. The results of the research are useful for improving, building or rebuilding theory, for enriching the knowledge of the field or of reality in general. The theory is support and beneficiary of scientific research. Practice, on the other hand, is the beneficiary of the research’s results, but also a supplier of many of the problems it’s called to resolve. It is the most important real reference, perhaps the only one, if we admit that theory, as a whole, has emerged as a result of the need to solve actual problems and then to generalize”.

The results of the research are intended for scientific publishing. Scientific research takes the path of scientific publishing, the path of “gaining freedom” from the results by transmitting them to the universal scientific environment. “Communicating the results of investigations is an activity, a mandatory task and a way to exploit the results by reintegrating the acquired knowledge in order to reach the expected results according to rules laid down by Pascal” [13]. The scientific environment ensures the framework for voicing the pro and/or con opinions of academic and research communities, meant to secure the functioning of the scientific research “machinery” on a positive level. Currently, the first addressee for publishing a research is the pro and/or con opinions of an academic and research community, meant to secure the functioning of the scientific environment. Currently, information and communication technologies, which facilitate the extremely fast access to the results of the research, have a significant impact of the national and international scientific environment,
directing increasingly more scientific journals towards online publishing. Future research will target an
analysis regarding the framework of online publishing for scientific journals, with the aim of giving support to
improve the management of Romanian publishers.

References