Tools for promoting a scientific article: Computer Optics journal case study

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Abstract. The author analyzes the main tools for promoting scientific articles that are used most often by the editorial board of the Computer Optics journal to promote the publication in international scientometric databases and popularize the ideas of science. It is noted that the use of these tools allowed the publication to increase significantly the “portfolio” of articles, the number of articles published per year, including the articles in English, increase significantly the citation of journal articles in other scientific publications, as well as expand the geographical spread of authors.

1. Introduction
The Computer Optics journal has been published since 1987 and Russian and in English. Within this time, 43 volumes have been published with over 1,800 scientific papers. Since 2016, it has been published 6 times per year. Every issue has at least 20 articles and reviews [1] in the following sections: diffractive optics; informational optical technology; nanophotonics and optics of nanostructures; image analysis and understanding, pattern recognition; geo-information technologies; digital processing of signals and images. Earth remote sensing technologies; hyperspectral data analysis; numerical methods of computer optics; intelligent video analysis [2].

Starting from the very first issue, all the articles of the journal are available for open access [3-4] on the journal website: www.computeroptics.ru.

As a result of the efforts of the editorial staff, every year the journal has been improving its scientometric indicators in the respective international databases (ISDBs). This particular goal was set in late 2014 by the Editor-in-Chief of the journal, Academician of RAS V.A. Soifer [5].

Besides, starting from 2015, the number of citations of the journal has grown substantially. Based on the preliminary data for the year 2018, this indicator has first rose beyond the number of 1000 citations. Since 2017, the journal has reached the Q2 level in all subject areas represented in it [6]. In accordance with the Scimago Journal Rank, the scientific journal “Computer Optics” entered the first quartile in the field of “Engineering” based on the indicators of 2019. All these achievements became possible due to the well-reasoned editorial politics with respect to international promotion of the journal using up-to-date tools and methods of promotion.

2. Promotion tools
The development of Internet and information technologies revealed that traditional publications of scientific articles in journals are no longer sufficient. Increase of citations of both the article and the
journal, attraction of attention of scientific community towards the issues addressed in the articles, improvement of scientometric indicators requires various tools and methods of article promotion. We shall now analyze the major tools of promotion of the most cited scientific articles [7-54] from the "Computer Optics" journal. I should note that the publications [55-75] of the authors of articles [7-54] determine Scopus H Index of a number of other domestic journals: "Optoelectronics, Instrumentation and Data Processing," "Technical Physics Letters," "Russian Microelectronics," "Russian Engineering Research," "Journal of Optical Technology," "Pattern Recognition and Image Analysis," "Optical Memory and Neural Networks (Information Optics)," "Herald of the Russian Academy of Sciences."

2.1. ISDB

Presently, any scientific edition, if it aims at international level, should have its website not only in Russian but in English as well. If particular rules are observed, this allows very fast listing in various international scientometrics databases including Scopus and Web of Science. Since 2012, the Computer Optics journal has been indexed in the Scopus database where the archive of issues is available starting from the year 2008 (issues for the period 2001-2007 are being prepared for publication). Since 2017, the Computer Optics journal has been indexed in the Web of Science Core Collection (Emerging Source Citation Index) where all issues starting from 2015 are available.

According to the journal website, Computer Optics is also found in such databases as Compendex, Crossref, DOAJ, Urlich’s Periodicals Directory, Applied Science & Technology Source Ultimate of EBSCO Publishing based on the EBSCOhost Research Databases platform, in the Inspec referral databases, and in the collection of the EastView database. It is also present in the Russian databases, namely in the Scientific Electronic Library (NEB) which is included in the RSCI core.

The presence of the journal in many databases ensures fast discoverability of the journal and separate articles in the Internet and on specialized web resources, allows comparison of scientometric indicators of the journal (and its contributors) with other scientific journals (authors) in the similar areas of knowledge. What is most important, however, is that the presence in various ISDBs increases the chances of the article being cited in other journals of international level with Q1 and Q2 indexes. Specifically, the index of article and journal citation is one of the main reasons for the journal to be included in the main database, the Web of Science Core Collection (Expanded).

2.2. E-libraries and Repositories

It is seen from the research [76] that electronic editions are becoming more and more popular. This became the reason for the creation of paid (for subscription-based journals) and free (for open-access journals) electronic libraries and repositories.

Usually publishing houses are using resources of free e-libraries to increase their footprint in the Internet and increase the number of references to the journal, and to attract additional audience. The issues of the Computer Optics journal are published in such e-libraries as “CyberLeninka” (Fig. 1), “Lan’”, “KnoRus”, Math-Net. The journal is also available in the repository of the Samara National Research University (Fig. 2) that is one of the publishers of the Computer Optics Journal. As a rule, the Russian repositories working under universities publish the journals issued by the respective educational institutions. For example, the repository of the Samara University also has issues of the “Polyot” newspaper whose founder is the Samara National Research University.

2.3. Wikipedia

In the autumn of 2019, the page describing the Computer Optics journal including the data about the board of editors and major scientometric indicators was created in the open Internet encyclopedia “Wikipedia” (Fig. 3). Despite the fact that the average number of visitors of this Internet resource is approx. 11 billion per month [77], Wikipedia is not broadly embraced by the scientific community, a major reason being that the information in Wikipedia is at times not confirmed and not scientific. The articles from Wikipedia are not indexed by the ISDBs and do not receive any scientometric indices. Nevertheless, this resource may also be regarded as a tool to promote the journal and its specific
articles (using the Comments), because the Wikipedia audience is very broad and the Wikipedia content is accessed every day by people worldwide.

**Figure 1.** The Computer Optics journal profile in the “CyberLeninka” electronic library.

**Figure 2.** The Computer Optics journal profile in the repository of the Samara University.

2.4. Social Networks

Publishing houses are beginning to use social networks very actively (including focused ones, e.g. Professional.ru), partner sites (publishers and founders) as a very important channel to promote their journals; in this respect, two ways may be observed.

First, the “official” journal blog is opened with news, snippets of articles, editorial stories etc. Second, the members of the board of editors publish their private blogs which they use not only to advertise for their journal but to promote it into the international scientific community. Same methods are used to promote the journal in popular social networks (VKontakte, Facebook, Twitter, Odnoklassniki).

Besides, marketing experts of publishing houses are engaged in professional internet forums (sometimes openly when they act as staff of the journal, sometimes “covertly”) by answering
questions, promoting the journal, referring to specific articles in past issues, suggesting topics for discussion etc. The forums are also used to publish specific articles, to announce new issues, and information about activities organized by the journal.

Figure 3. The Computer Optics journal page in Wikipedia.

Regrettfully, this promotion tool is not very popular and seldom used in Russia; however, early steps are made. Since 2019, the page of the Samara University Publishing Development Center has been on Facebook (Fig. 4). This online venue allows announcement of new issues of journals published by the university including issues of Computer Optics, and publication of most important news and updates from the partners, ranking agencies, and Russian branches of scientometric databases.

Figure 4. Facebook page of the Samara University Publication Development Center.

In 2020, the editorial board of the Computer Optics journal is planning to create its page on Facebook, both in Russian and in English, as this social network has the world’s largest number of registered users, “i.e. represents the most popular and extended implementation of the social networks in the world with a number of registered users exceeding 1.3 billion people” [78]. The availability of the publisher’s own page in the social network will enable it to engage in discussions on vital topics and articles, exchange knowledge, receive reviews, promote scientific developments among users,
increase article citation, and attract new contributors and reviewers. Besides, since the Computer Optics journal does not have a mobile version of the website, the page in the social network will make the publishing house accessible from any smartphone at any time.

2.5. Information Agencies
One more channel for the promotion and popularization of science is information agencies that allow raising public awareness about scientific research, developments and achievements. In 2019, the Samara University made an agreement with Russia’s largest informational agency, RIA “Novosti”. Following the terms and conditions of the agreement, the University provides to the agency the notes about most significant scientific articles published in journals of international level belonging to first or second quartiles. Computer Optics is one of such journals. In less than a year, RIA “Novosti” published approximately 10 articles with references to scientific papers from Computer Optics [79]. These articles are extended annotations written in simple, non-technical language without special terminology and concepts. This makes the scientific work of the Samara University understandable for millions of people in Russia and abroad, people with access to Internet and its news and information resources. An article published in a journal usually attracts attention of hundreds, maybe thousands of people accessing the official website of the journal or having a subscription. Popularization of scientific developments by means of information agencies makes scientific articles highly demanded and popular among millions of users.

However, this tool has a flaw: from the entirety of the news stream (hundreds and thousands of news stories per day) the users may not always be able to trace the story that might be interesting to them. A day later, the news story might get lost in the archive of the news agency having been replaced by more important and up-to-date information including that from the realm of science.

2.6. Scientific Conferences
Various scientific conferences also facilitate engagement of new authors and reviewers to the journal and promotion of journals among scientific institutions and universities. One of such conferences is “Informational Technologies and Nanotechnologies” held annually by the Samara University and the Image Processing Systems Institute of RAS [80]. In the course of conference, the guests may receive free copies of the Computer Optics journal and answers to their questions as to getting their papers published in this journal. Besides, following the results of the conference the best reports may also be published in the journal (following the peer review process).

In their turn, the staff of the Computer Optics editorial board also take part in international conferences where they not only present the journal to other participants but also make reports on the organization of editorial work [6], share experience with colleagues and receive consultations from experts of Elsevier and Clarivate Analytics. These recommendations find their implementation on the pages of the journal with respect to article layout and design.

2.7. Bulk Messaging
Some experts consider bulk mailing of letters with journal information and publishing opportunities to be yet another tool to promote a scientific journal; however, this method is not embraced by many as it is considered to be spam and a feature of a “predatory journal”.

At the same time, bulk mailing of the journal itself to the authors and contributors, scientific institutions and industry-specific universities as a rule is welcome and considered to be “good manners” and “a sign of attention” to its authors.

3. Conclusion
Publishers of scientific journals spend fewer resources on traditional means of promotion (advertising in the first place) of journals and seek other means to attract attention of their audience.

The sphere of Internet is becoming more and more important. “The availability of a website is no longer sufficient for successful promotion on the web. Publishers are opening pages in social
networks, keep their blogs, publish informational newsletters, and cooperate with electronic libraries” [81]. The use of the abovementioned promotion tools in the Computer Optics journal resulted in the increase of the “portfolio” of articles sent to the publisher, and increase of the number of authors including foreign authors (respectively, the number of articles in English increased as well). The presence of the journal in social networks and its mentioning in the news of leading information agencies not only popularizes the science but makes the journal recognizable by scientific and interested communities. Moreover, the described promotion tools enabled the journal to get in the Q2 in 2017 (source: Scimago Journal & Country Rank) in all areas of knowledge (before 2016, the journal was only in Q4 and Q3), and by the results of 2019, its performance allowed it to come to Q1.

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