

Heritage and Digitization as in the Example of the Scientific Journal “Glasnik matematički”

Jasna Dravec Braun
PMF-Matematički odjel Središnja matematička knjižnica
Bijenička c. 30, Zagreb, Croatia
jdravec@math.hr

Summary

Based on the example of journal “Glasnik matematički” it is possible to present what influence modern technology has in spreading of scientific information and on its preservation. Simple digitizing by scanning the journal’s articles contents resulted in material that can be quality managed thanks to technical and software solutions. According to that, access to the journal is modernized increasing its accessibility - “visibility” and the number of potential authors too.

At the moment the journal is available online in three ways [<http://web.math.hr/glasnik/PastVol.html>]. As bibliographic data for the period 1966-1997 year, as full-text in free access for the period 1998-2003 year, from 2004-2007 combining as a bibliographic base and with free access from subscribing institutions only. Its back volumes will be successively scanned and digitized. It could be said that in this part of processing the journal contents, preservation of scientific information for future generations is in the function of heritage. Through open access it will be available to any user, any scholar who is interested, without limitations. Digitizing and archiving in Google Scholar, for now, will process preservation.

Electronic and print journal issues parallel appearance has the practical value of preserving print version, partially. Time will show at which point, if any at all, there will be a need for an online article and simultaneously the abandoning of a printed issue. If this occurred, care about the preservation management of a printed issue would be conveyed to preservation of the e-journal. With experience and accomplishments in publishing and storing till then, it would not be a more serious problem than the one advancement of information technology is putting before electronic contents.

Key words: digitizing, digital archiving

Introduction

Journal "Glasnik matematički" has been published since 1966.g. as a 3rd series of its precedents: "Glasnik Hrvatskog naravoslovnog društva" (Series I), founded in 1886, "Glasnik matematičko-fizičko astronomski" (Series II), founded in 1946. Its long tradition and quality give it a value of national knowledge heritage. Volumes of all three series are part of serials library holding in the Central Mathematical Library at the Department of Mathematics, University of Zagreb. It is also reviewed by two most famous mathematical data bases: MatSciNet maintained by the American Mathematical Society and Zentralblatt-MATH, issued by Heidelberg Akademie der Wissenschaften Fachinformationzentrum Karlsruhe, as well as in Russian mathematical database Referativnyj žurnal. Articles are written in English, German and seldom in French and Russian, with abstracts in Croatian until 1990, when this changed to abstracts in English only. The journal is published semiannually by the Croatian Mathematical Society and the Department of Mathematics, University of Zagreb. Financially it is supported by the Ministry of Science, Education and Sports. It also has long term exchange policy with 280 international journals all over the world. It publishes original research papers from all fields of pure and applied mathematics.

The journal is indexed in SCOPUS database and in Croatian portal HRČAK-Portal of Scientific Journals of Croatia.

Network accessibility is a real challenge in organizing particular contents, and web sites. On one hand it enables a comprehensive way of linkage through mathematical databases, sites with thematically arranged journals and similar and on the other hand hierarchical restriction of access in order to ensure economic stability of print issue production. According to this "Glasnik matematički" is included in two thematical journal lists: *Topology-Related Journals*, and *Journals containing articles related to number theory*. It is also included in more general journal lists: *Printed Journals with Mathematics and Internet sites*; *AMS Digital Mathematics Registry*; *The Index of all Journals worldwide for Mathematic, Statistics, Econometrics, Actuarial Sciences, Quantitative Finance, OR; Mathematics Journals on the Web*.

Subscription to the journal enables access to its online content while anonymous users have restricted access to four previous years.

For preserving written heritage it is necessary to answer some basic questions: how, in which extent, by whom it will be done and from where the financial support is to be ensured. What was done in that direction for "Glasnik matematički" until today is based mainly on the enthusiastic work of managing editor PhD. Andrej Dujella, and software editor PhD. Josip Tambača, professors at the Department of Mathematics, University of Zagreb.

Preservation of the journal

“Glasnik matematički”, as many other journals in the contemporary information era, has different possibilities solving preservation needs. One classic solution is to deposit print versions in appropriate places. But publishing of the print version has a parallel electronic issue for the last ten volumes and reasonable as much as modern consideration of preserving goes into the direction of digital electronic archiving. Volumes from the period 1998-2003 have articles in full-text and free access accessible from its main web site as well as last four volumes, which have free access from subscribing institutions only. Digitizing was done by scanning deposited volumes and creating Pdf files of each article for volumes 33 and 34. For other eight volumes Pdf files of the original articles that were prepared for printing were extracted from the *glasnik* document class for LaTeX2e. This whole procedure was without expenses what is a challenge for the preservation policy.

Two decisions were brought regarding the journal “Glasnik matematički” preservation, depending on accessibility of its articles at the present time. One is successive digitizing of back volumes starting from volume 31 backwards. It is an extensive job to do that cannot be left to enthusiastic workers. The Editorial committee accepted Google’s offer for taking over this project. The journal will be digitized using destructive scanning. There will be possibility of retrieving digitized articles from Google Scholar. The publisher maintains copyright and ownership of their contents.

The second decision is connected with online issues with restricted access, accessible from the journal’s main web site and Google Scholar, and the portal Hrčak, as well. The ease with which modern technology allows contents to be presented on the Internet sometimes may lead to redundancy. To avoid this, serious efforts were made by associations of libraries, at different levels, not to duplicate work and records during preservation on different media (de Lusenet (ed.), 1997). But when a whole process moves towards e-environment, everything is different because the focus of today’s preservation is not the preservation of particular storage media, but rather on long-term access to the intellectual content of the resource (Gould, Varlamoff, 2000). The question of redundancy emerges due to numerous digital collections, which offer the same range of information. For journals due to their web sites with the whole or partial content independent of collection or archive they are included or indexed in. However, existence of institutional archives did not cut subscriptions of scientific journals, so many of them became hybrid (Silobrčić, 2007) and so did “Glasnik matematički”. It has the moving wall model of balancing accessibility from restricted to open access. Editorial committee defined the moving wall of four years. This could affect exchange with international journals. Because of that the possibility of exchanging electronic articles should be taken in consideration. When once digitized, documents are in the same process as born-digital. If in future the print version of the journal will be abandoned, its preserva-

tion will change toward preservation of born-digital documents. The only present and future doubt could be existence of online archives if access is ensured. What is preserved from damage are print versions, less or not copied at all because e-versions exist providing better printed texts than the copy itself.

Conclusion

In the example of the journal "Glasnik matematički" decision on long term storage and preservation is to be brought by the publisher as well as the initial creation of the digital documents without expenditure. A strategy for digital preservation is based on existing print versions of the journal and its electronic issue for the last ten volumes. As far as quantity of work on digitization rice the project is taken over by Google Scholar. At this point the aims to have wider public and to be preserved are interlaced.

Hybrid in regard to its accessibility it balances archiving and publishing by four years moving wall.

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