
CHAPTER 3

Electronic Preservation Project for Ukrainian Open Access Journals (EPP UA) to Safeguard Research Content during the War**Sabina Auhunas^{1,*}, Saskia Ernert¹, Heike Gutsche¹ and Nataliia Kaliuzhna¹**¹ *German National Library of Science and Technology (TIB), Welfengarten 1 B, 30167 Hannover, Germany***Keywords:** Long-term digital preservation, Open Access Ukrainian journals, Webrecorder.**INTRODUCTION**

There are various reasons why academic journals hosted on institutional platforms can disappear from the Internet. Such occurrences may stem from technical glitches, instances of hacking, or the straightforward loss of content during server updates [1]. The peril of losing invaluable research content increases dramatically due to the ongoing war in Ukraine, as Ukrainian libraries, archives, and universities contend with persistent threats of destruction and loss stemming from Russian rocket attacks [2]. The escalating hostilities not only jeopardize the physical infrastructure of academic institutions but also pose a significant risk to the accumulated scholarly knowledge housed on institutions' servers. As a consequence, concerted efforts are urgently required to implement robust measures for the protection and preservation of invaluable research materials, in particular national open access (OA) journals. This is also essential due to the fact that the Ukrainian repository “Scientific Periodicals of Ukraine (<http://nbuv.gov.ua/>) archives only PDFs and metadata, omitting the preservation of webpages. Furthermore, a considerable number of Ukrainian OA journals do

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not employ enduring preservation services such as LOCKSS, Portico, CLOCKS, etc. for long-term digital preservation. Due to these considerations, the EPP UA (Electronic Preservation Project for Ukrainian Open Access Journals of TIB Relevant Subjects) was initiated. The primary objective of the project is to safeguard Ukrainian OA journals and ensure their accessibility for future generations of scientists.

MATERIALS AND METHODS

This conference proceedings provide an overview of the Electronic Preservation Project for Ukrainian Open Access Journals. This encompasses a detailed account of the project's conceptualization, initiation, journal selection criteria, and web archiving software. Furthermore, challenges encountered in the course of project implementation will be systematically addressed, contributing to a thorough understanding of the current status of the initiative.

RESULTS

The Electronic Preservation Project for Ukrainian Open Access Journals was established in September 2022 under the auspices of the German National Library of Science and Technology (TIB). The collaborative development and refinement of the selection criteria were undertaken by the heads of the Scientific Service and the Media and License Management departments. Key information sources guiding this criteria development process included the UlrichsWeb journal database and the Directory of Open Access Journals (DOAJ). The criteria for journal inclusion were designed to align with research disciplines relevant to TIB's subject areas, specifically encompassing architecture, chemistry, computer science, engineering, mathematics, physics, technology, and the natural sciences. Additionally, considerations were given to the presence of articles in English and appropriate licensing practices. The project's methodology is inspired by the international initiative SUCHO - Saving Ukrainian Cultural Heritage Online [3].

Within the framework of the EPP project, we utilize the Webrecorder web archiving tool — an open source tool designed to capture interactive websites and replay them at a later time with utmost accuracy. As of July 2023, the project engages three members of Team East Asia/Eastern Europe, two project volunteers, and one student assistant. To date (October 2023), we have successfully preserved 47 journals, encompassing a total of 20,773 articles and exceeding 21 GB of content through collaborative efforts. Within the digital archive, the amassed WARC files offer versatile utility through two distinct modes of utilization: firstly, they can be rendered using specialized software like Replay-Webpage, preserving the original appearance of the journal webpage. Alternatively, these files can be extracted and locally displayed through standard

browser software. This ensures the faithful retention of the web page's visual and interactive elements. Moreover, all files, including content files such as PDFs, can be extracted from the WARC container within the archive and independently processed. It is important to note that various difficulties were encountered during the course of the project. These challenges included difficulties accessing journal websites, attributed to blackouts and power shortages in Ukraine. Additionally, the process proved time-consuming due to the substantial volume of journal issues involved. Moreover, a notable challenge arose from the lack of appropriate licensing for the content earmarked for preservation [4].

CONCLUSION

The Electronic Preservation Project for Ukrainian Open Access Journals has been instrumental in its commitment to safeguarding and preserving valuable scholarly content. Employing the Webrecorder tool, the project successfully web-recorded 47 journals. The ongoing efforts signify a collective commitment to overcoming challenges and ensuring the enduring accessibility of Ukrainian scholarly resources for future generations.

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