

Support to OPERAS Research Infrastructure

D3.4 Living Book

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OPEN SCHOLARLY COMMUNICATION IN THE EUROPEAN RESEARCH AREA FOR
SSH - PREPARATION

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I. Living Book, embedding fluid and collaborative scholarly communication

A. Introduction

In August 2018, OPERAS launched a series of White Papers prepared by its Special Interest Groups (SIGs), which covered the landscape of scholarly communication, addressing such issues as advocacy for Open Science, common standards among research infrastructures and service providers, platforms and services, multilingualism of publications, Open Access business models and tools.

Since the publication date all documents have been viewed altogether almost 8,500 times and downloaded over 4,500 times, which indicates their relevance for the community. And although these papers provide a comprehensive, reliable overview of the state of the art, the three years that have passed since the day of their publication is a lot of time in scholarly communication.

White Papers are core to the OPERAS operations as they codify the state of the art as well as paths the infrastructure can take. Moreover, they are products of sustained team effort of SIG members collaborating on the subject and contributing with their unique perspectives. Hence, when discussing the present update of White Papers we dedicated substantial time not only to their content but also to choosing the right format which could accommodate the need for future updates as well as foster community discussions. This is why we started to investigate the concept of a living book.

This paper provides the summary of our work on the living book, starting with the definition of this genre and an overview of notable examples. This is followed by the needs analysis and technical specification of the OPERAS living book, providing a rationale behind our technical decisions.

B. What is a living book

The concept of a living book was born out of displeasure with the limitations of print communication imposed on the new, digital genres. Due to technological constraints the printed book (or its digital equivalent in a form of an e-book in pdf or epub format) codifies its message in a finished, rarely updated volume. Through centuries of writing and reading books were positioned as products of certain (usually long) processes, distributed to the audience in an asymmetric communication: readers receive the work and can respond



through established channels like reviews of references in other articles and books. However, as the authors of the reports stemming from the *Academic Book of the Future* project observe, the current technological advancement allows for disconnecting thought from the form in which it is disseminated, leading us to consider different, perhaps more suitable vehicles for our arguments. We are empowered “to produce new kinds of books, with extended texts, narratives, ideas, and arguments produced in new ways, with dynamic and interactive images, graphics and sounds; links within the text and to external sources; and facilities for updating and annotation.”¹ This means increased flexibility on many levels as “writing may become more collaborative, and much more influenced by embedding or linking to a wide variety multimedia and other content, and the use of interactive features in the presentation of the book.”² This openness also entails linking the text with external resources and data through hyperlinks and references. The texts themselves become elements of a larger ecosystems and user networks, where “social reference management allows individual users to share personal libraries and exchange reviews, notes, and recommendations in order to find the most valuable references through the collective choices of their peers”³. Thus, new technologies allow us to reconsider the shape of the argument and the means to convey it.

As Xiang Ren pointed out “a growing number of digital publishing initiatives are approaching scholarly communication in new ways and incorporating dynamics of openness, networking, and collaboration into their most basic functions.”⁴ However, what seems to constitute a living book is its temporal dimension, i.e. certain liquidity of content, which is impossible to achieve in print forms. It allows for alterations, additions and comments to be added on the way. That is why it is hard to draw a clear line between a living book and such genres as open science notebook or wiki. It seems that being a “living” document is simply one of the features shared by all these formats. In order to broaden our understanding of this genre we conducted several case studies, looking at the available tools for creating and presenting digital publications. Below we discuss the most relevant examples which will allow us to distill the key features of a living book.

¹ Jubb (2017), *Academic Books and their Futures: A Report to the AHRC and the British Library*, London, p. 14, https://academicbookfuture.files.wordpress.com/2017/06/academic-books-and-their-futures_jubb1.pdf

² Ibid. p. 33

³ Ren X: *Beyond Open Access: Open Publishing and the Future of Digital Scholarship*. In *ASCILITE - Australian Society for Computers in Learning in Tertiary Education Annual Conference*. edited by Gosper M., Hedberg J., and Carter H., 2013, p. 745. <http://www.ascilite.org/conferences/sydney13/program/papers/Ren.pdf>

⁴ Ibid.



An interesting case to start with is Living Books About Life⁵, published by Open Humanities Press (OHP) with funding from the Joint Information Systems Committee (JISC). It is an open access publishing series consisting of selections of texts about life - both from science and humanities disciplines. Each book in the series was developed and compiled from already existing open access publications, very often linking to external repositories. While the project was intended to be a "living" series, its innovative potential is limited to remaining available to users, who wish to edit, update, remix and add comments to a given set of texts, suggesting the inclusion of other publications, attaching hyperlinks, etc. However, the form of the book itself has remained classic, and the individual publications included in the book do not possess any unusual functionalities. Consequently, we can speak of a limited "livingness" in this case.

Another example is Culture Machine Liquid Books⁶, a series of experimental digital publications that allows open editing and addition of content. Users can rewrite, tag, remix and reuse all the books in the series. Technologically, the series uses a wiki engine that enables logged-in users to create their own versions of articles, in a similar way to Wikipedia. Despite the use of various open solutions, most of the publications included in this collection consist of webpages with sets of links to external documents (some of the links have expired and have not been updated since). The individual pages look like blog posts and one can comment only on the entire page, not on particular paragraphs. The most recent user comments come from 2017. Liquid Books continues to exist and more publications are planned. However, the editors of individual publications together with Open Humanities Press state that selected publications will be frozen and published as finished texts (while remaining open access).

Apart from regular publishing initiatives there are tools and plugins dedicated to providing "living" solutions for publications hosted on private and institutional websites. One such plugin is CommentPress⁷, whose open source version was released in 2007. It is a WordPress plugin created by the Institute for the Future of the Book, whose goal was to apply modern technological solutions used in blogs to more complex, slow-developing works that require advanced text organization. One of the important innovations this tool brings to living books is positioning comments next to the text rather than below it, which helped to achieve a visual representation of the dialogue and show the book as a work in progress, developed through the conversation of commenters. An additional innovation is the possibility of commenting on selected fragments of the text (paragraphs, sentences,

⁵ http://www.livingbooksaboutlife.org/books/Main_Page

⁶ <http://liquidbooks.pbworks.com/w/page/11135951/FrontPage>

⁷ <https://futureofthebook.org/commentpress/about-commentpress/>



words), which was not possible in earlier, typically blog-based solutions. The limitations of this tool include the rigid structure of the template, which makes it inconvenient to add multimedia materials in a free and open manner. CommentPress is definitely a tool that gives primacy to the text, so despite innovative technological solutions, it treats the book in a traditional way.

Some tailored platforms offer more services to support and facilitate digital publishing. Scalar⁸ is a project developed by Alliance for Networking Visual Culture (ANVC) in collaboration with Vectors and IML, supported by the Andrew W. Mellon Foundation and the National Endowment for the Humanities. It is a free open source platform designed to make it easier for authors to write long-form, born-digital scientific texts online. Scalar enables users to attach different types of media and juxtapose them with text without requiring advanced technical knowledge. It is a semantic web development tool that provides a balance between standardisation and structural flexibility for different types of media. In addition, the platform supports author collaboration and reader commentary. Adapting the platform to more advanced needs, however, requires cooperation with a developer.

To sum up, we may identify two key features, central to the concept of a living book: fluidity and collaboration. The general concept of a fluid or unstable text precedes the electronic forms of communication and is well established in literary studies as it signifies modifications undergone by texts while functioning in culture, be it editing, copying, reissuing, etc. This quality of texts is well recognised by creators of scholarly editions who need to deal with many sources while reconstructing a critical version of a given work.⁹ While the digital environment opens new possibilities for scholarly editions - like dynamic collation, variant analysis¹⁰ - it also allows for fluidity of other texts, including scholarly outputs.

In general, it means that a given output does not have to be “frozen” in a particular moment, as the web enables “erasing the artificial distinction between process and product”.¹¹ This may have two implications. On the one hand, the web allows for versioning and updating the final output. It is a phenomenon Juhás et al. dubbed a paradigm of

⁸ <https://scalar.me/anvc/scalar/>

⁹ Cf. Bryant, John. 2005. *The fluid text: a theory of revision and editing for book and screen*. Ann Arbor: University of Michigan Press.

¹⁰ Cf. McGann, Jerome J. 2001. *Radiant textuality: literature after the World Wide Web*. New York: Palgrave.

¹¹ Priem J: Beyond the Paper. *Nature*. 2013; **495** (7442);, p. 437.



“continual improvement in scholarly publishing”¹², a metaphor drawn from software development, treating the published version as a snapshot of an ongoing creation process subject to comments and feedback loops. A scientific paper, they write, is understood as “a dynamic document evolving in time, which can have different versions and releases, published online, enabling incremental and continual improvement in analogy to software as a service, with software new version releases and software support enabling continual improvement of software” (ibid.) New versions of a text can be provided (as in many repositories like Zenodo or wiki-based publications¹³) and they are open for feedback and comments (as in the case, for instance, of the reviewing process at *F1000 research*). On the other hand, fluidity of the web textuality enables genres and formats which don’t have to be final products of a given research and could be published and constantly updated on various stages of a research project such as scholarly blogs or open science notebooks.

The second living book feature we wish to highlight, collaboration, is interconnected with fluidity as they are both allowed by affordances of web technologies. By collaboration we mean opening the text to other authors and contributors, who can share early findings and receive quick feedback from the interested communities. For instance, this is a key feature of scholarly blogs, which are dubbed “creative catalysts”¹⁴ because they serve as a platform where new ideas emerge from such communication. Similarly, open publishing initiatives, allowing the community to conduct open conversations on published works are considered more transparent and democratic than traditional, closed peer-review processes.¹⁵ This rapid feedback is also an essential component of the continual improvement paradigm, mentioned above, whereby reviews sketch recommendations for further improvement.¹⁶ With this overview in mind we started the process of designing the OPERAS Living Book.

¹² Juhás G, Molnar L, Juhásová A, et al.: Continual Improvement Process in Scientific Publishing. In ICETA - IEEE International Conference on Emerging eLearning Technologies and Applications, Proceedings. edited by František Jakab, Institute of Electrical and Electronics Engineers Inc. 2018, p. 245

¹³ Mietchen, Daniel & Hagedorn, Gregor & Förstner, Konrad & Kubke, M Fabiana & Koltzenburg, Claudia & Hahnel, Mark & Penev, Lyubomir. (2011). Wikis in scholarly publishing. *Nature Precedings*. 6. 10.1038/npre.2011.5891.1.

¹⁴ Kjellberg S: I Am a Blogging Researcher: Motivations for Blogging in a Scholarly Context. *First Monday*. 2010; 15(8).

¹⁵ Ren X: Beyond Open Access: Open Publishing and the Future of Digital Scholarship. In *ASCILITE - Australian Society for Computers in Learning in Tertiary Education Annual Conference*. edited by Gosper M., Hedberg J., and Carter H., 2013, p. 747. <http://www.ascilite.org/conferences/sydney13/program/papers/Ren.pdf>

¹⁶ Juhás G, Molnar L, Juhásová A, et al.: Continual Improvement Process in Scientific Publishing. In ICETA - IEEE International Conference on Emerging eLearning Technologies and Applications, Proceedings. edited by František Jakab, Institute of Electrical and Electronics Engineers Inc. 2018, p. 247



II. OPERAS' Living Book: technical specifications

The work on the living book was carried out within the WP3 of the OPERAS-P project, focused on providing support for the OPERAS infrastructure, and was informed by analyses and explorations of Task 6.5 (Future of scholarly writing in SSH). Dwelling on the analysis of the innovation landscape (more information in the WP6 report forthcoming in June 2021), the technical specifications were defined by Mateusz Franczak (IBL PAN) and implemented by Yoann Moranville (OPERAS technical coordinator) and Judith Schulte (OPERAS Communication Officer), with contributions and support from Maciej Maryl (IBL PAN), Agnieszka Szulińska (IBL PAN), Pierre Mounier (OpenEdition), Chloé Lebon (OpenEdition), and Marta Błaszczczyńska (IBL PAN).

A. Requirements

The specific technological requirements and functionalities used in the living book are based on the OPERAS needs, which were defined earlier. We describe them here in greater detail:

- a. **Location and sustainability.** The first important issue is to choose where the living book will be published. It was important to us that the publication be closely linked to OPERAS and that the server chosen provide sustainability, technical support and editing ability without involving external developers and service providers.
- b. **Automatically updated Zotero bibliography.** Another requirement that had to be met was the implementation of a Zotero bibliography in the living book. Each report has its own collection in Zotero, which can be updated and edited at any time. It is important that all changes made in Zotero are immediately visible in the publication.
- c. **Versioning.** As the activities described in the white papers are constantly being conducted and developed, the reports need to be updated regularly to reflect the state of the art. The answer to this is the implementation of versioning, which will allow for both updates and comparing the new version with the earlier ones.
- d. **Referencing.** Convenient citation of white papers increases their visibility in research circles. Therefore, we felt it was important to find a convenient solution for displaying citations.
- e. **Annotating and commenting.** Possibility to comment and annotate is one of the most important features of a living book. By adding comments, hyperlinks, building

semantic relationships with other pages and articles, inter-research dialogue, collaborative writing and research development become easier.

- f. **Quality control (peer-review)** By allowing comments, publications are subjected to critiques and reviews, so they can be quality-controlled by a much larger number of researchers than in the traditional publishing model. This functionality also enables open peer review, which is becoming an increasingly popular review model supported by the European Commission, policy makers and funders, as well as many international research institutions.

B. Solutions

The preparation of the [OPERAS Living Book](#) was preceded by the overview of the existing tools for creating and presenting digital publications. In addition to meeting technical requirements, tools and services were checked for stability, technical support, regular updates and sustainability.

While technical solutions for the living book are ready, the white papers will be updated and reviewed until the end of the project.

a. Wordpress - Living Book running on OPERAS server

After considering various options, a decision was made to use [WordPress](#) with plugins ensuring implementation of required functionalities. We surveyed the available options but didn't want to use paid services for sustainability reasons, nor could we implement tools like Scalar which did not support the default functionalities we defined as crucial. The ability to freely transform, edit, use plugins and the overall sustainability were all in favor of this choice. By using WordPress, it was possible to publish the Living Book within the OPERAS website without any difficulties. Moreover, they thus became an integral part of the OPERAS environment, closely linked to information about current activities. WordPress is one of the most popular content management systems. It is freely configurable, customizable to personal requirements, has good technical support, and is a well-known and widely used system (it has been in use since 2002).

OPERAS Living Book

OPERAS Living Book

- Living Book – Introduction
- Advocacy (2018)
- Advocacy (2021)
- Common Standards (2018)
- Common Standards (2021)
- Multilingualism (2018)
- Multilingualism (2021)
- Open Access Business Models (2018)
- Open Access Business Models (2021)
- Platforms and Services (2018)
- Platforms and Services (2021)
- Tools Research and Development (2018)

Living Book

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- Advocacy: version 2 (2021); version 1 (2018)
- Common Standards: version 2 (2021); version 1 (2018)
- Multilingualism: version 2 (2021); version 1 (2018)
- Open Access Business Models: version 2 (2021); version 1 (2018)
- Platforms and Services: version 2 (2021); version 1 (2018)
- Tools Research and Development: version 2 (2021); version 1 (2018)

Introduction

Version 1 (2021)

Advocacy

There is an autosave of this post that is more recent than the version below.
[View the autosave](#)

OPERAS Advocacy White Paper, July 2018

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DOI: [10.5281/zenodo.1324036](https://doi.org/10.5281/zenodo.1324036)

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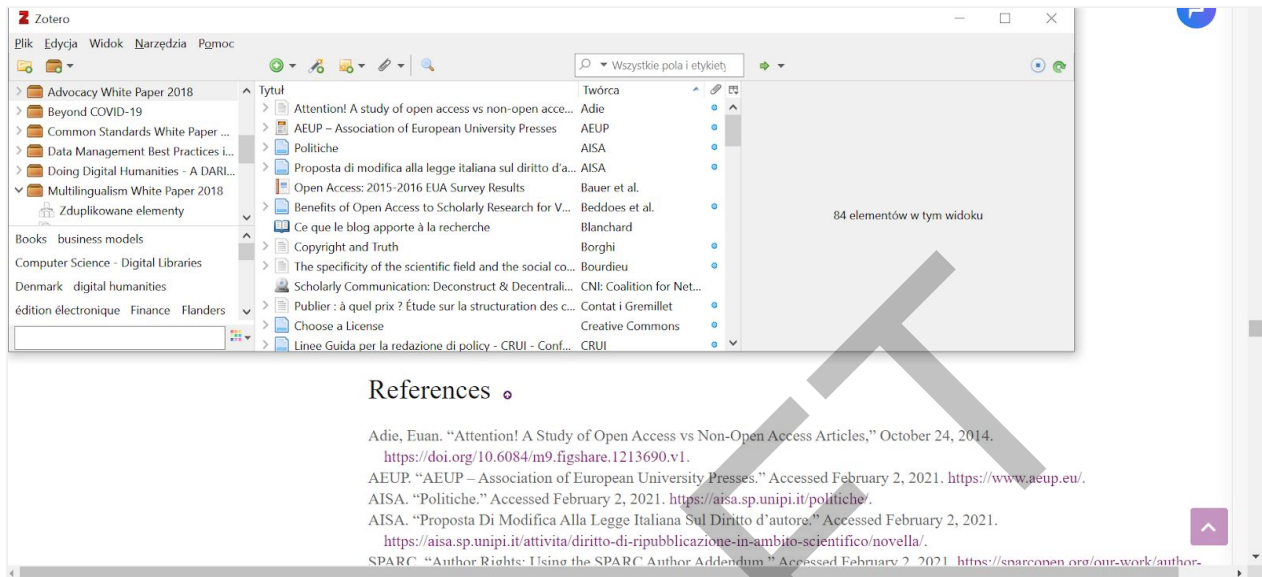
Document → Paragraph

b. Zotero bibliography via ZotPress

By using WordPress it was easy to implement the bibliography collected in Zotero, because it was enough to install the appropriate plugin - [ZotPress](#). It allows linking the Zotero collection with the WordPress site. In this way, the bibliographies of each White Paper were automatically connected to the text. In addition, every time an item is added or



removed from the collection, ZotPress automatically updates the bibliography on the website, so the reader can be sure that the references in the report are up-to-date.



c. Versioning solution through separate PDF files

Another issue to consider was versioning. For reports that describe the current state of knowledge, it is important to perform ongoing updates because reports can quickly become outdated. This is crucial due to the development of research and the production of new information. We decided to present new versions of the White Papers within the Living Book, so users could navigate between versions with a single click on the report's subpage. In this way, we avoided linking to external sites and were able to present the updated reports in a consistent way, maintaining the same layout. The relevant collections in Zotero have also been updated for the new versions, making it easy to compare bibliographies and check new references.

d. Citations added manually

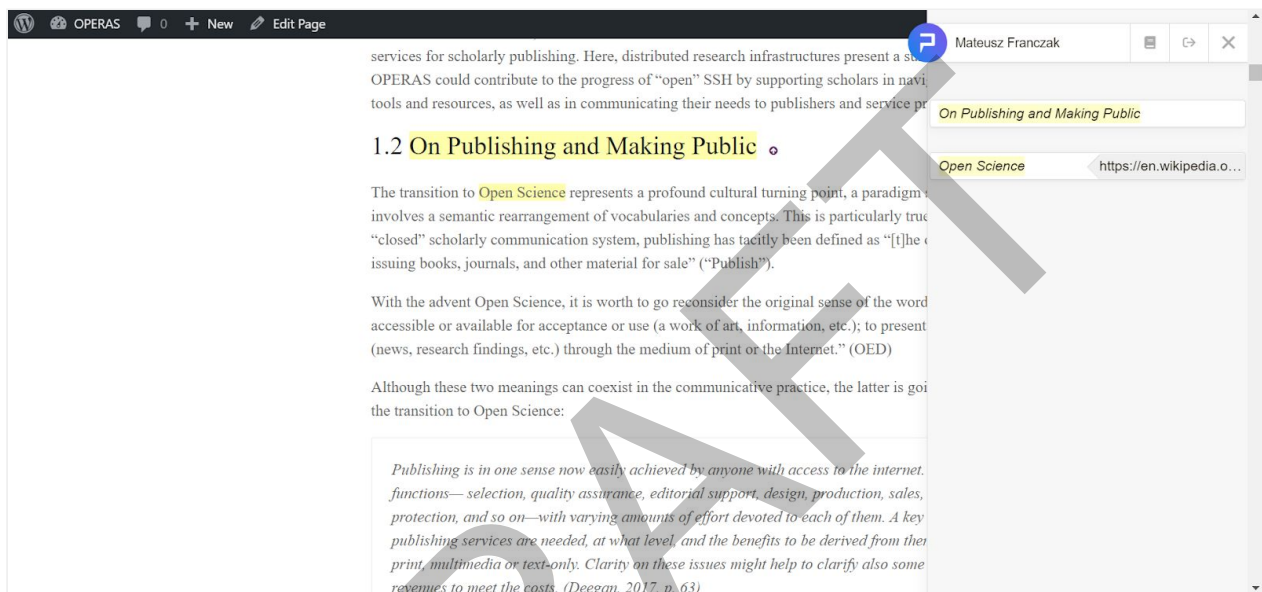
Initially, we planned to use the [Cite](#) plugin for citations, but after checking its technical capabilities, we found out that it does not allow multiple authors for one publication. Therefore, we decided to add citations manually, following the visual solution used in Cite.

e. Annotations and comments with Pundit

The last functionality that needed to be implemented was an annotation tool. We decided to use [Pundit Annotator](#), designed and developed by Net7, which cooperates with OPERAS on various projects. With Pundit Annotator, you can comment on and highlight



selected parts of text, add hyperlinks, hold discussions and suggest modifications. The Pundit Annotator is free to use and it only requires the user to log in to their account. Web annotations serve to enrich content, enable evaluation and addition of sources, and facilitate and support collaborative research. They can also be used for open peer review. A great convenience is the possibility to browse comments using the user's notebook.



f. “Reviewathons”: quality control with pundit

We decided to use pund.it not only for annotations, but also as a tool for applying open peer review to the Living Book, as [Pundit](#) allows its registered users to add their comments to both individual fragments of text and entire white papers. In connection with this, we plan to conduct "reviewathons," i.e. two-weeks long reviewing marathons during which invited reviewers and members of the audience will comment on and discuss the paper. By enabling asynchronous communication and focusing on a limited time-period, we plan to stimulate a genuine conversation around the whitepapers which may lead to the preparation of new versions. OPERAS Special Interest Groups will be responsible for coordinating community feedback for their white papers.

III. Conclusion

The living book prepared in the course of OPERAS-P project is a prototype aimed at responding to the needs of the OPERAS community. Based on the needs assessment, the analysis of similar projects and available technology we prepared tailored solutions aimed at addressing key requirements of this community. We discussed this process in detail above.

Now, it is OPERAS community's turn to take the advantage of this living book and use it according to the needs expressed earlier. We will closely work with SIG leaders during "revieweathons", observing how the discussion on the white papers unfolds and how actual users interact with this format. The lessons learned will inform our understanding of scholarly communication and perhaps modify the living book in the future according to the emerging needs of the community.

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