




Managing Archaeological Data with Omeka S

Jonathan Hanna  based on peer reviews by **Electra Tsaknaki** and 1 anonymous reviewer

Bastien Rueff (2024) Dealing with post-excavation data: the Omeka S TiMMA web-database. Zenodo, ver. 3, peer-reviewed and recommended by Peer Community in Archaeology.
<https://doi.org/10.5281/zenodo.7989904>

Submitted: 23 June 2023, Recommended: 13 January 2024

Cite this recommendation as:

Hanna, J. (2024) Managing Archaeological Data with Omeka S. *Peer Community in Archaeology*, 100341. [10.24072/pci.archaeo.100341](https://doi.org/10.24072/pci.archaeo.100341)

Published: 13 January 2024

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Managing data in archaeology is a perennial problem. As the adage goes, every day in the field equates to several days in the lab (and beyond). For better or worse, past archaeologists did all their organizing and synthesis manually, by hand, but since the 1970s ways of digitizing data for long term management and analysis have gained increasing attention [1]. It is debatable whether this ever actually made things easier, particularly given the associated problem of sustainable maintenance and accessibility of the data. Many older archaeologists, for instance, still have reels and tapes full of data that now require a new form of archaeology to excavate (see [2] for an unrealized idea on how to solve this).

Today, the options for managing digital archaeological data are limited only by one's imagination. There are systems built specifically for archaeology, such as Arches [3], Ark [4], Codifi [5], Heurist [6], InTerris Registries [7], OpenAtlas [8], S-Archeo [9], and Wild Note [10], as well as those geared towards museum collections like PastPerfect [11] and CatalogIt [12], among others. There are also mainstream databases that can be adapted to archaeological needs like MS Access [13] and Claris FileMaker [14], as well as various web database apps that function in much the same way (e.g., Caspio [15], dbBee [16], Amazon's Simpledb [17], Sci-Note [18], etc.) — all with their own limitations in size, price, and utility. One could also write the code for specific database needs using pre-built frameworks like those in Ruby-On-Rails [19] or similar languages. And of course, recent advances in machine-learning and AI will undoubtedly bring new solutions in the near future.

But let's be honest — most archaeologists probably just use Excel. That's partly because, given all the options, it is hard to decide the best tool and whether it's worth changing from your current system, especially given few real-world examples in the literature. Bastien Rueff's new paper [20] is therefore a welcomed presentation on the use of Omeka S [21] to manage data collected for the Timbers in Minoan and Mycenaean Architecture (TiMMA) project. Omeka S is an open-source web-database that is based in PHP and MySQL, and although it

was built with the goal of connecting digital cultural heritage collections with other resources online, it has been rarely used in archaeology. Part of the issue is that Omeka Classic was built for use on individual sites, but this has now been scaled-up in Omeka S to accommodate a plurality of sites.

Some of the strengths of Omeka S include its open-source availability (accessible regardless of budget), the way it links data stored elsewhere on the web (keeping the database itself lean), its ability to import data from common file types, and its multi-lingual support. The latter feature was particularly important to the TiMAA project because it allowed members of the team (ranging from English, Greek, French, and Italian, among others) to enter data into the system in whatever language they felt most comfortable.

However, there are several limitations specific to Omeka S that will limit widespread adoption. Among these, Omeka S apparently lacks the ability to export metadata, auto-fill forms, produce summations or reports, or provide basic statistical analysis. Its internal search capabilities also appear extremely limited. And that is not to mention the barriers typical of any new software, such as onerous technical training, questionable long-term sustainability, or the need for the initial digitization and formatting of data. But given the rather restricted use-case for Omeka S, it appears that this is not a comprehensive tool but one merely for data entry and storage that requires complementary software to carry out common tasks.

As such, Rueff has provided a review of a program that most archaeologists will likely not want or need. But if one was considering adopting Omeka S for a project, then this paper offers critical information for how to go about that. It is a thorough overview of the software package and offers an excellent example of its use in archaeological practice.

NOTES

[1] Doran, J. E., and F. R. Hodson (1975) *Mathematics and Computers in Archaeology*. Harvard University Press.

[2] Snow, Dean R., Mark Gahegan, C. Lee Giles, Kenneth G. Hirth, George R. Milner, Prasenjit Mitra, and James Z. Wang (2006) *Cybertools and Archaeology*. *Science* 311(5763):958–959.

[3] <https://www.archesproject.org/>

[4] <https://ark.lparchaeology.com/>

[5] <https://codifi.com/>

[6] <https://heuristnetwork.org/>

[7] <https://www.interrisreg.org/>

[8] <https://openatlas.eu/>

[9] <https://www.skinsoft-lab.com/software/archaeology-collection-management>

[10] <https://wildnoteapp.com/>

[11] <https://museumssoftware.com/>

[12] <https://www.catalogit.app/>

[13] <https://www.microsoft.com/en-us/microsoft-365/access>

[14] <https://www.claris.com/filemaker/>

[15] <https://www.caspio.com/>

[16] <https://www.dbbee.com/>

[17] <https://aws.amazon.com/simplifiedb/>

[18] <https://www.scinote.net/>

[19] <https://rubyonrails.org/>

[20] Rueff, Bastien (2023) *Dealing with Post-Excavation Data: The Omeka S TiMMA Web-Database*. peer-reviewed and recommended by Peer Community in Archaeology. <https://zenodo.org/records/7989905>

[21] <https://omeka.org/>

Reviews

Evaluation round #1

DOI or URL of the preprint: <https://doi.org/10.5281/zenodo.7989905>

Version of the preprint: 1

Authors' reply, 12 December 2023

Dear Jonathan Hanna,

Firstly, I would like to express my sincere gratitude for agreeing to recommend this article and for providing valuable suggestions. I have diligently revised the submitted article, incorporating feedback from both you and the two reviewers.

In response to your suggestions, I implemented the following modifications:

1. Rectified typographical errors, ensuring none remained.
2. Strengthened the background section with the title "The Choice for Omeka S: Related Works and Advantages." Additionally, I enriched the information on the TiMMA project in the section titled "The TiMMA Project and the Need for a Web-Database."
3. Integrated several case studies throughout the article to establish a better connection between Omeka S functionalities and the challenges and goals of the TiMMA project.

I have attached my responses to the reviewers in the reply section below for a more detailed insight into the changes. The revised paper is also attached. However, I mistakenly deleted the tracked changes version, so you will only find the final text without the modifications visible. If needed, I can provide a new file with visible changes. However, please be aware that, due to the extensive changes requested by the second reviewer, the entire text may appear in red, which might be less helpful.

I apologize for any inconvenience, and I appreciate your understanding.

Best regards,

Bastien Rueff.

[Download author's reply](#)

[Download tracked changes file](#)

Decision by [Jonathan Hanna](#) , posted 30 July 2023, validated 31 July 2023

Revisions Requested

Dear Bastien,

Your manuscript entitled "Dealing with post-excavation data: the Omeka S TiMMA web-database," which you submitted to Peer Community In Archaeology has been reviewed. The reviewer comments are included at the bottom of this letter.

While both reviewers find merit in your paper, they also raise important concerns that require some revisions before acceptance. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript. Aside from several typographical errors, I agree with the reviewers that a stronger background section is needed (including why Omeka was chosen in the first place), as well as stronger development of at least one case study. For example, the paper begins to describe the usefulness of the database in assessing finds from multiple spaces in Structure 115, but it seems to stop short of making the point. Another sentence or two in that section might solve the problem.

I do appreciate that authors may have good reason for following some suggestions but not others, so your responses (separate or interpolated in the attached) to the points made by reviewers will assist me in assessing the resubmission. Overall, I think there were many merits to the paper and that it would be of interest to any archaeologist looking at options for digital databases.

When you resubmit, I kindly ask too that you follow the reference formatting specifications for the journal and ensure the paper is as polished and finalized as possible.

Thanks for submitting to PCI, and I look forward to your resubmission,

-Jonathan Hanna

Reviewed by anonymous reviewer 1, 26 July 2023

The paper aims to report an exploration of the CMS Omeka S in the context of a post-excavation project. However, some aspects could benefit from revision to better highlight its connection with the project and provide a more consolidated perspective.

In the abstract, while the paper's goal is introduced as an analysis of Omeka S's relevance within the project, it predominantly focuses on describing the CMS's advantages and benefits. Adding a brief description of the project, employed methods, and synthesized conclusions in the abstract would help readers anticipate the findings more effectively.

The introduction does well in presenting the motivations for the study but lacks a clear formulation of research questions. Properly defining the research questions would bolster the justification for choosing Omeka S as the preferred technical solution, enriching the introduction with more references to relevant research would also be beneficial.

Moving on to the Materials and Methods section, the paper could benefit from a more comprehensive description of the database structure and logical model designed specifically for the Timma project. Additionally, Figure 3, illustrating the database architecture, would be more impactful with a thorough explanation.

Integrating information on the kind of data collected and connected within the database would be valuable. Furthermore, including information about the implementation of the database, who was involved in it, and the researchers' experiences in its use would provide more context and insights for readers.

The authors should be mindful that not all readers may be familiar with technical concepts like ontology and semantics. Therefore, briefly explaining these concepts and providing references to relevant literature would make the paper more accessible and user-friendly.

While the results of using Omeka S within the Timma Project are presented, it would be beneficial to include specific examples or case studies to illustrate the outcomes more vividly, like, for example Structure 115 mentioned in the previous section.

The paper would be more comprehensive with a discussion section that considers the results and their implications for the people involved in the study and potential users. Addressing the broader implications of the findings in general terms would enhance the paper's value.

In the conclusions, it would be helpful to summarize and connect the main elements covered in the paper, along with comments on the findings. Additionally, offering insights into potential improvements and future directions related to the project and the use of Omeka S would be valuable.

Throughout the paper, reinforcing the connection between the project and the chosen tool, Omeka S, would provide a more cohesive and coherent narrative. Strengthening this relationship will underscore the significance of the study's findings and its relevance to the post-excavation project.

Reviewed by [Electra Tsaknaki](#), 17 July 2023

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