

# Repository renewal project: a case study from White Rose Libraries

White Rose Libraries (WRL) is a collaboration between the university libraries of Leeds, Sheffield and York. WRL runs two shared repositories to host research outputs and electronic theses which, between them, represent one of the biggest institutional repository services in the UK. Starting from 2021 WRL undertook the repositories renewal project to look for the next iteration of the repository platforms. In this case study we discuss the motivation for the repositories renewal project and the process that was undertaken. We talk about outcomes of the project – which was a conscious decision to retain and further develop the open source EPrints platform – and highlight some of the lessons learned from the project. We reflect that the open source research repository market has remained largely static for some time and intend this as a provocation for institutions and platform developers to further engage in defining the requirements for future repositories and setting a course to get there.

## Keywords

open access, digital repositories, collaboration, collaborative provision, open source software, eprints



THOM BLAKE  
Open Research  
Manager  
University of York



ANDY BUSSEY  
Head of Library  
Digital Services  
University of  
Sheffield



KATE  
PETHERBRIDGE  
White Rose Libraries  
Executive Manager  
and White Rose  
University Press  
Press Manager  
White Rose Libraries

## Introduction

### Context

White Rose Libraries (WRL) is a collaboration between the libraries of the Universities of Leeds, Sheffield and York ([White Rose Libraries, n.d.](#)). These libraries are part of a number of above-campus collaborations, including WRL, Research Libraries UK, Academic Libraries North and the N8 Research Partnership. These collaborations, with their different scales and different areas of focus, bring different opportunities. The WRL collaboration is agile, due to scale, and geographically compact, enabling WRL to deliver concrete outputs like shared services and projects with practical outcomes. WRL has several strands of activity, including the fully open access White Rose University Press. However, a key area of focus is the two shared repositories: White Rose Research Online (WRRO) ([White Rose Research Online, n.d.](#)) was launched in July 2004 and holds research outputs such as journal articles, conference papers, books and book chapters; White Rose eTheses Online (WREO) ([White Rose eTheses Online, n.d.](#)), added in 2007/8, holds electronic theses from the three universities. These repositories were the first points of collaboration that cemented the WRL

partnership. Through collaboration, the three partner libraries were able to develop these repository services more quickly and efficiently than as individual institutions.

Developed as part of the Jisc- and CURL-funded SHERPA project ([Allinson & Harbord, 2009](#)), White Rose repositories were in the vanguard of the UK institutional repositories movement and remain one of the largest institutional repository services in the UK. The continued role these repositories play in surfacing the research outputs of the parent universities shows their ongoing relevance and value. WRL's collaborative approach in delivering these brings valuable economies of scale. By sharing infrastructure, the three universities can share resources, pool expertise and remove duplication. Collaborative resourcing allows WRL to have technical staff resource dedicated specifically to the repositories, which supports WRL to be proactive in developing the repositories to best suit user needs. Another significant benefit is the wider pool of expertise to draw on than is often available at a single institution, and cross-site discussions allow the partners to act as critical friends when discussing local processes as well as in developing shared policies and procedures. This collaborative approach to repository provision gives WRL a unique perspective, making it well-equipped to contribute to discussions at national and international level.

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### Considering the next iteration of the shared repositories

Since their inception, the WRL repositories have used the open source EPrints platform ([Eprints, n.d.](#)). A self-hosted instance of EPrints, using infrastructure based at the University of Leeds, is developed and supported by a dedicated 1.0 FTE (full-time equivalent) technical resource.

In 2018, the WRL Executive Board instigated a review of WRL repository provision, motivated by a continued drive to be at the forefront of repository provision and also by a perception that the EPrints platform was part of a previous generation of systems. This was felt to bring increasing risks around ongoing sustainability and community support as well as how the platform could integrate with other, newer systems as part of the developing research environment.

Significant work in 2018-19, including consultation across the three sites, established an updated and comprehensive set of requirements for the WRL repository platform/service. This work also confirmed that the three partners wanted to continue with the collaborative approach to the WRL repository service, underpinned by a set of shared principles. By the end of 2019 WRL was preparing to engage with the market to identify the best direction to take the platform. Work paused during the Covid-19 pandemic as the three libraries focused on mitigating its impacts on services.

Discussions restarted towards the end of 2021 and it was agreed to restart the work on the next iteration of the platform with a revised timeline. There was across WRL a strong appetite for change and a sense of an opportunity to move to a 'next-generation' platform that would place the repositories on a firm and progressive footing for the next five to ten years. This work became known as the WRL Repositories Renewal Project.

## WRL Repositories Renewal Project

The new timeline envisaged two years to scope and define the requirements, one year to select and secure the next platform and one year to implement the transition, aiming to go live in 2026. The principles and comprehensive set of requirements produced during the 2018-19 work were reviewed by the partners to ensure that they met WRL's current needs. The principles included a continued commitment to collaboration and openness. Although REF requirements are a powerful driver for repository functionality, the openness of the content is at the heart of the repositories. Open source was stated as a preference for the repository platform as it fitted better with the principles; however, this was

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3 only a preference and at all stages of the process WRL was open to a commercial tender if it was felt that was the best solution. It is also worth noting that the project focused solely on the shared repository platform. Each site also uses an independent current research information system (CRIS, Symplectic Elements in Leeds and Sheffield; Elsevier's Pure in York) and these systems were not within the scope of the project.

Reviewing the requirements developed in previous work made clear that further work was now needed to present these in a suitable state to take to market (either in a commercial tender or for reviewing open source solutions). To support colleagues in the substantial work required to prioritize and consolidate the requirements, WRL decided to bring in an external consultant.

The brief for the consultant required that they engage with the different audiences to collate and refine the requirements, evaluate the current and emerging repository landscape and engage with members of the repository community. The consultant would work via interviews, focus groups, desk reviews and surveys. Following a competitive process, Ken Chad Consulting was selected. Ken worked with The International Bunch to undertake the surveys. The outcomes from the consultancy included a refined list of requirements, a survey of the repository landscape within the UK and the project report.

To prepare for a procurement and selection (either commercial or open source) it was decided to run a market testing exercise called a Prior Information Notice (PIN) in order to discuss our requirements, possible options and likely costs. The PIN was a formal process but not a procurement and no preference could be given for participation if there was a future procurement. There was a brief for suppliers to respond to and an open meeting for prospective suppliers to ask questions of the WRL team. The number of responses was disappointing. On following this up we discovered that in some cases potential suppliers did not see the PIN and there may have been suppliers who were too busy to respond to an exercise that would not result in a sale. WRL did receive some responses describing viable and affordable solutions (i.e. within a budget set by the WRL Executive and not significantly more than estimates for future local hosting).

As a preference for open source had been established as a guiding principle, WRL also undertook desk research on open source options and interviews with several members of the open source repository community. This work reinforced the findings of the consultancy report that the two most used platforms in the UK are DSpace and EPrints. Prior to the Covid-19 pandemic there had been an expectation that newer solutions, such as Samvera, would develop to provide a new generation of repository platforms; the research showed that this has not happened for research output repositories and that newer systems had not progressed to provide options that more established solutions could not. It was clear that EPrints was still a viable solution, with one hosted provider having migrated a customer to EPrints not long before they spoke to WRL. One library that we spoke to was looking to migrate away from EPrints, but they were considering this due to a lack of local support rather than a concern about the platform itself. DSpace was a strong alternative with an organized community.

During this part of the project members of WRL attended two events, which turned out to be significant to the project. An online workshop on the theme of 'changing repositories' organized by the UK Council of Open Research and Repositories (UKCORR) gave the opportunity to learn from other institutions that are looking to change, or have recently changed, repository platform. The event reinforced some of the conclusions already reached about the repository landscape and showed that many repository managers in the UK were becoming frustrated by perceived limitations of current platforms, but also that there was diminishing appetite for potentially costly procurement exercises. Members of WRL also attended the Open Repositories Conference 2024 held in Gothenburg. This was a useful opportunity to reconnect with the open repositories community, to reflect on the viability of different solutions and to talk to members of the DSpace community in particular. It was also an opportunity to engage with members of the EPrints community, specifically those involved in the support and development of the platform.

4 The WRL Repositories Board reflected on the information gathered across the PIN, assessment of open source solutions, interviews with other repository managers and through conference attendance. Whilst it was clear that there were affordable commercial solutions, there were also two competitive open source solutions. Given the principle that open source options are preferred it was decided that there was no justification in moving away from an open source solution.

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When DSpace and EPrints were assessed against the requirements, they were both found to be strong contenders. Both platforms have strengths and weaknesses but either could be an effective solution. It was clear that any benefits DSpace had over EPrints would be minor and that the cost of migrating platforms would not be worthwhile; therefore it was decided to remain with EPrints.

Given the decision for an open source solution, WRL then had to decide whether to move to commercial hosting or to retain a self-hosted platform. Had WRL not already had the infrastructure and resources in place to support a self-hosted model, a hosted solution may well have been an attractive option, balancing the flexibility of open source with the support hosting offers. From its current position and resourcing, however, WRL felt that there was no significant benefit in moving to a hosted solution.

EPrints remains a strong platform for an open repository and it continues to be flexible to meet changing requirements. The EPrints community has not previously been as active as that of DSpace, but this could be improved and it was felt that if EPrints was chosen then WRL should work towards this goal. The recommendation to the WRL Executive Board was that WRL should retain the EPrints platform.

## Project outcome

The project concluded with WRL recommitting to the EPrints platform as the solution for WRRO and WREO. This strong commitment will offer stability through the next REF cycle until at least 2030. It is not a decision to maintain the status quo for ease or a lack of appetite for change. Rather, it is a positive choice made as a result of the detailed work done during the Repositories Renewal Project.

A key positive about EPrints is its open source nature and the community support this brings. One of the initial drivers for considering a platform change was the perception that commitment to core development and support of the platform was decreasing. In engaging more closely with the EPrints technical community, it has become clear that this is not the case. However, much of the ongoing and planned work is not visible outside the technical community and this shapes the wider understanding of the current and future viability of EPrints as a platform. Part of the WRL decision to continue with EPrints is the commitment to be an active and supportive member of the EPrints community. Building on connections made at Open Repositories 2024, WRL colleagues are part of a recently created EPrints Steering Group. This group aims to reconnect the wider EPrints community and increase engagement with the current status and future development of the platform. This is very important to WRL, as EPrints needs to continue to meet the repository requirements of the international HE sector. As an EPrints user with a development capability, WRL is committed to supporting and feeding into the future evolution of the platform. To this end, WRL has released a public version of the project report ([White Rose Libraries, 2025](#)).

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As part of this recommitment to EPrints, WRL has restarted the development work on the repositories which had paused while the new platform was identified. At the time of writing, work is already under way to upgrade these to the latest available version of EPrints and to augment that core system with WRL-specific functionality that supports the collaborative use of the repositories. While, in the past, WRL has focused on developing the local instance

5 and sharing that work with the wider EPrints community, moving forward there will be more emphasis on implementing core release upgrades as these become available while still maintaining the focus on developing locally required functionality.

The project also led to the realization within WRL that it would be advantageous to have a better understanding of, and engagement with, the wider repositories sector. This would inform future discussions about the direction of the WRL repositories, help understand how platforms are evolving and help drive discussions in this area. One finding of the WRL project was a sense of stasis in the repository platform landscape, with the most used platforms, DSpace and EPrints, both being over 20 years old. Despite the work done by COAR on the next generation of repositories ([Boliini et al., 2017](#)), we feel there has been little discussion within the community of developers and users about what those repositories will look like. To kick-start closer engagement and discussion between the different players, WRL is developing a provocation to share with repository users and providers asking, 'What are repositories for and what do we need them to do?' WRL are looking to share this in more detail in 2026, alongside the implementation and engagement work outlined above.

## Lessons learned and reflections

WRL learned a great deal from the experience of undertaking the Repository Renewal Project.

One key takeaway was the importance of not forming preconceptions about any expected outcome. From the start, there was an assumption that the repositories would move to a new platform. A few different factors were behind this: there were questions about how EPrints would be developed and supported moving forward as well as concerns about the ongoing viability and sustainability of the platform. EPrints is written in the Perl programming language which, though well-established, no longer features in the TIOBE Index list of most used programming languages ([Jansen, 2025](#)). This raised concerns about the ability to recruit technical staff with the necessary skills and worries about easy interoperability with more modern systems. Coupled with the assumption that there would be 'next generation' platforms available, this shaped the project as one designed to find a new and different solution.

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Another learning point concerned the structure of the project and the scheduling of the different phases. Linked to the assumption that WRL would be moving to a new platform, the initial focus of the project was to review and define a list of requirements for selecting a new platform. Significant time and resources were invested in this, but as an isolated activity. With hindsight, the project could have benefited from undertaking the market engagement phase early on, as this gave useful insight into the available, and viable, options and the functionality they offer. This information could have streamlined the scoping phase and the requirements would have been based on an understanding of the actual functionality available. Some of the scoping discussions led to aspirational requirements that WRL expected would be available through newer platforms (increased use of AI, for example). Though WRL were trying to be forward-looking in how they support users, it would have been more useful to focus this around functionality that could be delivered in practice.

The market engagement phase revealed an unexpected stagnation in terms of platform availability. It showed that the WRL expectation of 'next generation repositories' was unfounded. Rather, the major open source options remain the well established platforms like EPrints and DSpace. Those moving away from these were investing in commercial solutions, usually with a greater financial commitment needed, or were looking to use their existing CRIS, such as PURE, as basic repository solution. The realization that options were more limited than hoped meant WRL refocused on how to deliver best repository service using the available options.



It is also important to flag how the collaborative nature of the WRL repositories sets WRL apart from single institution repository providers with different advantages and challenges. WRL's collaborative approach and the maturity of its repository service were important factors in the project. Collaboration brings benefits. Shared resourcing means WRL can employ a dedicated development and technical resource, with each institution providing one third of the required funding. Discussions with peer institutions indicate that this type of dedicated support is decreasing and some institutions prefer commercial models that include outsourced development and technical elements. For WRL, economies of scale through collaboration enable the agility and control that direct development of a self-hosted, open source solution can bring. It gives WRL the ability to make proactive improvements to offer a better user experience, to react in a timely way to changes in legislation and policy, and to resolve issues in real time. The fact that WRL institutions and users have become used to this control came through when defining requirements for the new platform, as there was significant emphasis on being able to support UK-specific issues (such as REF) and on having flexibility, responsiveness and control of development timelines. This context shaped the WRL decision-making process.

At the market testing phase, respondents who engaged can be split into three groups: commercial platforms, hosted open-source platforms and self-hosted open source platforms. WRL considered which of these options would be viable and most appropriate for the needs of the collaboration, with a decision made that open source offered the best way forward. This links to the commitment to open in the principles that underpin the shared repositories. It also reflects the unwillingness to move to a platform over which WRL would have limited direct control, and an awareness of the changing financial landscape. A long-term commitment to a new commercial platform, even when costs would be shared three ways, had to be a consideration as this increased financial outlay would have to be sustainable and bring sufficient extra value to justify the additional spend. While very aware of the benefits a commercial system can offer, WRL concluded that, in their specific case, these did not justify moving away from an open source platform in terms of either functionality or value.

Collaboration brings many advantages but can also add difficulties. For example, integrating a repository with different CRIS systems requires flexibility from the solution chosen. EPrints had already demonstrated its flexibility and a locally hosted implementation ensures that flexibility remains.

By recommitting to EPrints and engaging with the supporting community in a newly invigorated way, WRL saw an opportunity to support the ongoing development of the software and work with others to ensure it continues to meet current and emerging needs.

The key realization that came from the project as a whole is that, if libraries want a next generation of repository solutions, they need to drive these discussions across the sector. In order to do that, it seems a period of reflection is needed to understand what institutions want repositories to do and to be. What role do they play, and how is this changing in the current context of pressure on journal subscriptions, open access funding and content budgets more widely? Understanding this, and how it shapes the future of repository infrastructure, seems to be the next challenge.

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#### Abbreviations and Acronyms

A list of the abbreviations and acronyms used in this and other *Insights* articles can be accessed here – click on the following URL and then select the 'full list of industry A&As' link: <http://www.uksg.org/publications#aa>.

#### Competing interests

The authors have declared no competing interests.

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Corresponding author:

Thom Blake

Open Research Manager

University of York

United Kingdom

E-mail: [thom.blake@york.ac.uk](mailto:thom.blake@york.ac.uk)

ORCID ID: <https://orcid.org/0000-0001-5507-9738>

Co-authors:

Andy Bussey

ORCID ID: <https://orcid.org/0000-0001-5688-6865>

Kate Petherbridge

ORCID ID: <https://orcid.org/0009-0000-5880-5053>

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