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Key objectives of the study and significance

1 In November 2017, COAR published the report, *Behaviours and Technical Recommendations of the COAR Next Generation Repositories Working Group* (2017). One of the priority user stories for next generation repositories is related to peer review and assessment of the content in repositories, described as follows, "repositories can increase their value by supporting commenting, annotating and peer review activities as functional layers on top of their collective content. If repositories were able to support assessment and peer review, they could begin to reposition themselves at the centre of scholarly communication."

2 At the same time, there has been increasing consolidation across the research lifecycle by large publishing companies, exemplified by the recent purchases by Elsevier of Bepress, SSRN, and Science-Matrix, etc., leading to discussions around the need for community-owned, open infrastructures and services (Posada & Chen, 2017). To compete with the large publishers, we need to find solutions that integrate our stand-alone systems across the lifecycle and beyond the individual institution, to enable innovation and variation, and contribute to improved scholarly quality and usefulness.

3 Among the initial challenges that this collaboration among open repository and publishing platforms developers is addressing with this presentation is a need to consult with the larger academic community on the full range of use cases for scholars, societies, and libraries in the integration of these services. The focus is on developing systems that contribute to scholarly qualities of the work, including preservation, collaboration, iteration, and review, that involve the multiple purposes of repositories and the often discipline-specific standards of scholarly publication.

Design and methodology

4 The green and gold distinctions in open access publishing are mainly driven by the technical and business separation between publishing platforms and institutional and thematic repositories operated by research institutions or research communities. In an effort to build across those artificial distinctions, and to eliminate a dependence on a less-than-perfect green open access, this project seeks to develop next-generation repository functionalities through greater integration between repositories and journal publishing platforms (*Behaviors,* 2017). It seeks to develop in consultation with various academic communities a conceptual model for publishing overlay services on top of distributed repository platforms. The model builds on existing repository systems and services, including their support and maintenance among research libraries, by seeking ways to integrate with open source publishing capabilities thereby combining the strength of the two worlds, while building out an integrative and interoperable infrastructure for scholarly communication. This "overlay" model of peer review on top of repositories, decouples publishing functionalities (registration, certification, archiving, awareness, and assessment), and should lead to lower costs and increased sustainability of publishing services, while also adding value to repositories and their content.

5 This presentation will outline a framework for building traditional and innovative publishing functionalities as a service layer on top of repositories, utilizing major open source platforms, such as those developed by PKP and Coko. It will explore with the audience the ways in which these systems can be configured and networked, as well as managed and maintained. It will provide an overview of the conceptual model and architecture and discuss current plans for development and piloting such services with research communities. It will invite use cases from the perspective of authors, editors, and reviewers, for handling a wide variety of interests in improving the scholarly quality of the work through iteration, review, commenting, conversation, and collaboration. How will such systems serve scholarly societies? How can they used to test out the value of new forms of open review, open and live data, instrument sharing, teaching integration? What are the life cycles of the research process that such systems can contribute to involving registration, collaboration, publication, and preservation.

6 We envision that the distributed platform will be used by a range of stakeholders: funders, institutions, scholarly societies, scientists have access to a suite of functionalities to manage the life-cycle of disciplinary/transdisciplinary journals, enabling innovative open review and metrics, supporting publishing workflows for all products of science, while sitting on top of a base of public repositories. This model would minimize publishing cost while maintaining academic standards and, by connecting with the communities and their services, fully embrace and foster Open Science publishing principles.

Outcomes thus far or expected outcomes

7 This model holds some promise for the evolution of scholarly communication in the digital era, with gains to be made through consultation with audiences such as that gathered for Elpub2019. It has the potential to leverage our existing investments in repositories and local journal systems, which we hope will lead to greater sustainability of

services, lower costs of publishing, increasing the value of repositories, and contributing to the development of an academy-owned infrastructure for scholarly communication.

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ABSTRACT

Green and gold are artificial distinctions in open access publishing, mainly driven by the technical and business separation between publishing platforms and institutional and thematic repositories operated by research institutions or research communities. This project builds on the vision of next-generation repositories by pursuing the prospects for greater integration between repositories and journal publishing platforms. It involves developing, through consultation with the academic communities, a conceptual model for highly configurable publishing overlay services to sit atop distributed repository platforms. The model removes the green and gold dichotomy by providing a system that enables academic communities to integrate publishing capabilities with repository capabilities, thereby combining the strength of the two worlds, while building out a community controlled, integrative, and interoperable infrastructure for scholarly communication.

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Keywords: academy owned infrastructure, repositories and publishing, next generation repositories

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