A NATIONAL REPOSITORY PLATFORM FOR SHARING THE CHALLENGES OF LONG-TERM DIGITAL CURATION OF RESEARCH DATA

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Abstract – Qatar National Library has launched a research repository named Manara to address the need for curating, preserving, and enabling Open Access to Qatari research output. The repository aims to operate on a consortium-based service model that allows sharing the overall responsibility of curating and preserving a wide variety of research outputs between the Library and key partner institutions, thereby developing a sustainable ecosystem for research outputs in Qatar. The poster presents the work done to establish Manara, including the underlying technical and operational model.

Keywords – Research data, curation, preservation, sustainable model, open access, digital repository

Conference Topics – We're all in this together, Sustainably: Real and Imagined.

I. INTRODUCTION

The research community in Qatar has been producing increasingly large volumes of research output, including both traditional publications and non-traditional scholarly content, such as datasets, over the past decade[1]. This steady growth in Qatar's research landscape is a vital part of the country's effort to transition its economy from a hydrocarbon-based to a knowledge-based one, characterised by innovation, entrepreneurship and excellence in education[2], to achieve a society capable of sustaining its development and providing a high standard of living for its people.

Qatar National Library (QNL)[3] supports Qatar's transition from a natural resource-dependent economy to a diversified and sustainable one through the Library's core values and portfolio of services that include long-term stewardship of and Open Access to Qatari research outputs.

The poster presents the work done by the Library to establish a sustainable research repository for Qatar. The poster highlights the underlying technical and operational model that facilitates sharing the responsibility of long-term digital curation and preservation of Qatari research outputs between the Library and other key stakeholders.

II. THE MAIN CHALLENGE AND STRATEGY

At a very early planning stage, the Library recognised [1] the unique challenges of setting up a national repository service to support various aspects of research output curation, including data and metadata management, handling copyrights and complex licensing models that underpin sharing and publishing different research outputs as well as their long-term digital preservation. These

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[1] Over 4,000 projects funded that produced over 12,000 publications and 3,000 datasets since 2007. https://app.dimensions.ai/discover/grant?and_facet_funder=grid.507658.9 (Last accessed on 09 March 2023)

[2] Qatar National Vision 2030 - https://www.gco.gov.qa/en/about-qatar/national-vision2030/ (Last accessed on 09 March 2023)

[3] Qatar National Library - https://www.qnl.qa/ (Last accessed on 09 March 2023)

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challenges are further magnified by the pervasive lack of awareness regarding the significance of digital preservation, both at a national level and within the broader regional context. This became particularly evident during an online event in 2022 hosted by the Qatar National Library, which brought together repository managers from the region who collectively acknowledged the gap in both comprehension and implementation of digital preservation [2]. Exceptions to this trend include King Abdullah University of Science and Technology (KAUST) in Saudi Arabia for their commendable efforts in this area[4]. Similarly, QNL is the only organisation with an established digital preservation service in Qatar.

In addition, designing a research repository for Qatar requires striking an optimum balance among the diverse needs of the research community, encompassing individual researchers, affiliated institutions, and funding bodies. The complexity of the service infrastructure directly correlates with the wide-ranging nature of the research community. To tackle this challenge, the Library has adopted a strategic approach that involves collaborative partnerships with key stakeholders and the implementation of adaptable and future-proof technical solutions. This approach aims to forge a robust and sustainable service model for a national repository platform for research outputs.

III. MANARA – QATAR RESEARCH REPOSITORY

In November 2022, the Library, in cooperation with Qatar National Research Fund (QNRF)[5], soft-launched a new repository service called Manara[6] (Eng. lighthouse) with the ambition to capture, curate, preserve, and provide (open) access to all research outputs created in Qatar.

The repository provides a range of efficient and user-friendly features designed to support curating and publishing research outputs. It achieves this through a customised version of an institutional instance of Figshare[7,] a widely adopted cloud-based repository platform. To ensure the long-term preservation of the deposited content, the repository integrates with the Library's Archivematica[8]-based digital preservation system. This strategic combination of off-the-shelf products, loosely integrated with the existing technical infrastructure, reflects a deliberate design approach. It enables adopting a more suitable repository solution in future while safeguarding against potential vendor lock-in concerns.

A. A Consortium-based service model

The sustainability element of the technical architecture of Manara is effectively reinforced by the service model that leverages a national-level E-resources Consortium that the Library has been coordinating since 2016, ensuring optimum licensing and financial terms for subscription-based access to research and educational content for ten major institutions. Additionally, the consortium actively supports Open Access publishing through read-and-publish agreements. The collaborative nature of this consortium has demonstrated its ability to deliver significant benefits to its members, allowing them to achieve results that would be unattainable if they acted individually.

From an operational viewpoint, Manara is designed as a service which can be operated through a broad partnership, with the Library operating it and any Qatari research-oriented institution using it as its institutional repository. Each participating institution will get a dedicated sub-portal within the repository, necessary training, and content management rights along with digital preservation support from the Library. These dedicated sub-portals can serve as institutional repositories for the partner institutions, facilitating self-archiving (through the Library's digital preservation system) and enabling green Open Access routes for their research outputs.

From a curation standpoint, this consortium-based service model provides a sustainable and cost-effective way of sharing the responsibility of content curation and publishing with the participating institutions. This model places the decision about what to publish within the sub-portals in the hands of the participating institutions and thus fosters a

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[4] KAUST Digital Preservation - https://library.kaust.edu.sa/Digital_Preservation/Overview (Last accessed on 28 June 2023)

[5] QNRF - https://www.qnrf.org/en-us/ (Last accessed on 09 March 2023)

[6] Manara, Qatar Research Repository - https://manara.qnl.qa/ (Last accessed on 09 March 2023)

[7] Figshare - https://figshare.com/ (Last accessed on 09 March 2023)

[8] Archivematica - https://www.archivematica.org/en/ (Last accessed on 09 March 2023)

strong sense of responsibility for and ownership of the repository.

The Library aims to provide guidance and recommendations regarding content quality, best practices in research data management, copyright and licensing of resources, but participating institutions are ultimately responsible for the content they upload through their designated sub-portals.

IV. FUTURE WORK

Manara is a new service that will initially operate as a pilot. The long-term goal is to develop Manara as a core Library service that is strategically important for the Library's long-term mission and vision, including developing a sustainable ecosystem for managing and disseminating all research outputs in Qatar. The exact long-term sustainability model will be developed in cooperation with participating institutions after the initial pilot period (**by mid-2024**).

1. REFERENCES

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