



CAUL response to the exposure draft of the National Research Infrastructure Roadmap 2021, released for consultation by the Department of Education, Skills and Employment

[Link to Exposure Draft](#)

Are the recommendations appropriate to the current NRI environment?

The recommendations are appropriate for the current environment. We strongly support Recommendation 7 and suggest that a National Digital Research Infrastructure Strategy must encompass infrastructure for scholarly communications. The transition from a largely closed scholarly communications system, where research publications were largely behind a paywall and only accessible to those with access to expensive subscriptions, to a more open system is underway, but there is significantly more work to be done to transform scholarly communications that can only be achieved through a strategic approach. Immediate open access to research outputs is critical to support research quality, integrity, transparency and translation, and to meet the needs of industry, government, funders and researchers.

We also support Recommendation 5, and suggest that more integration between systems across the research lifecycle is critical. Further, we suggest that an integrated NRI ecosystem should be an open science ecosystem.

We suggest that improved industry engagement with NRI (Recommendation 6) could be achieved through the development of open infrastructure that lowers barriers to access and improves transparency.

We support Recommendation 4 and suggest that such an Advisory Group should draw on expertise related to scholarly communications.

Do the principles articulate the vision and key elements required of NRI, including investment?

We suggest that an additional principle that articulates a commitment to developing infrastructure for open science would strengthen the vision for NRI, and would align with the other principles. A commitment to open science, and investment in open science infrastructure, is critical to Australia's ability to address the significant domestic and global challenges we face in the short, medium and long terms. The recent adoption by Australia along with 192 other countries of the UNESCO Recommendation on Open Science provides a framework for national strategies on open science and has been welcomed by Australia's Chief Scientist. The Recommendation acknowledges the role of open science in increasing 'scientific collaborations and sharing of information for the benefits of science and society' and opening the 'processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community'. The UNESCO

Statement recommends investment in infrastructure for open science, and given Australia has adopted the statement, the NRI seems an ideal opportunity to take practical steps towards implementing the recommendation.

The NRI Roadmap has a clear focus on identifying the NRI investments required to support Australian research over the next 5 to 10 years. Are there any national infrastructure needs missing in the draft Roadmap?

There is a need for government investment to better interconnect the various elements of the research ecosystem through infrastructure. The UNESCO Recommendation on Open Science articulates the type of infrastructure required to support open scientific practice and highlights the need for standards and persistent unique identifiers to promote interoperability and allow and connect scientific objects across the research system. This requires strong investment in repository infrastructure for publications, data and code, along with creation and adoption of interoperable standards. Development of best practices that allow connections to be made between research objects across different types of repositories and other research systems, and across the research life cycle will be critical for maximising funding and investment outcomes and to foster a culture of open science.

Further, there is a need for investment in 'open bibliometrics and scientometrics systems for assessing and analysing scientific domains' (UNESCO). Research evaluation tools and datasets for assessment of research impact are critical research infrastructure and they must be open to ensure quality, integrity and transparency. This is not currently the case.

We suggest that the systems, services and personnel that underpin and enable scholarly communication fit within the definition of NRI as set out in the exposure draft and, investment in this infrastructure is critical, there is no call for such investment in the exposure draft. We suggest there is a need for coordinated national investment in infrastructure to support open scholarly communications. Examples of opportunities include development of national infrastructure for open journal and monograph publishing. At present, Australian universities independently manage open presses for monograph publication and open journals, with individual institutions managing their own infrastructure. The Scottish Universities Open Access Press is a recent example of a coordinated national approach to developing infrastructure for research monograph publication.

A key priority for Australia is to enhance research translation. The 2021 NRI Roadmap identifies some reforms and investments to achieve this. What other reforms would help deliver this priority?

Findable, accessible, interoperable and reusable (FAIR) research outputs are critical to research translation. The Council of Australian University Librarians has made significant progress in negotiating transformative agreements that aim to shift current publishing models from a largely pay-to-read model, where articles are only accessible to those with access to institutional subscriptions, to a pay-to-publish model, where articles are published open access. New agreements that will come into effect in January 2022 will allow more than 12,000 articles from Australian

researchers to be published open access with no article processing charges. This approach aligns with the Chief Scientist's current program of work related to development of an open access strategy for Australia, which will play a critical role in making scientific knowledge accessible to industry.

However, making Australia's research output findable, accessible, interoperable and reusable depends on having a diverse open scholarly communication system that reflects the needs of our communities. There is a need for investment in infrastructure to support scholarly communication initiatives that are specific to the Australian context, including those that publish Indigenous research, such as open access journals and books. These are currently largely supported by universities and other not for profit organisations and are vulnerable to changes in funding allocation by the parent organisation. There is also a need for investment in infrastructure to support university presses, which are important publishing outlets for open access research monographs in the humanities and social sciences, and which also publish regionally important research.

The Roadmap proposes that Australia could make landmark investments to drive step changes in research and innovation over the next 10 to 15 years. Do you agree with the assessment of potential areas for investment in the report? What other areas do you consider might fit the definition of landmark investment?

Investment in cutting edge national digital research infrastructure is critical. As noted above, we suggest that infrastructure for scholarly communications is critical and should be incorporated into the NRI area of cutting edge national digital research infrastructure. As suggested in our responses to previous questions, we suggest investment in infrastructure to support scholarly communication initiatives that are specific to the Australian context should be a priority, and that investment in national infrastructure for scholarly communications is critical.

The broader context of the UNESCO Statement's recommendation to open the 'processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community' should be considered as a principle that underlines the NRI Roadmap.

Submitted on behalf of CAUL by:

Catherine Clark, Director of CAUL's Advancing Open Scholarship Program (CAUL Board)

Kate Davis, Director of Strategy & Analytics (CAUL National Office)

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