Pure — open science

White paper

Navigating open science with the support of a RIMS

For research management and library professionals, RIMS, such as Elsevier's Pure, offer unique opportunities to demonstrate their value in an open science world

ELSEVIER

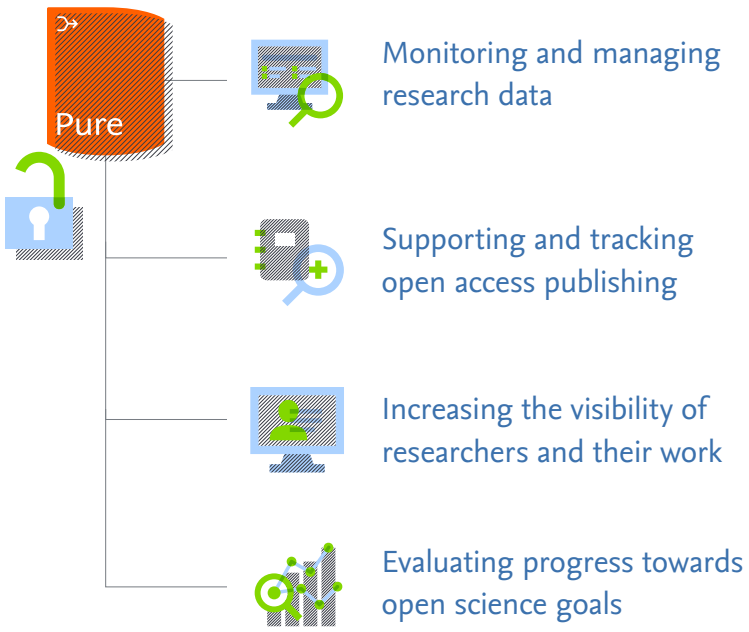
Pure

ISO/IEC 27001:2013 certified

Pure is a versatile centralized system that facilitates evidence-based approaches to your institution's research and collaboration strategies, assessment exercises and business decisions. It enables building reports, performance assessments, managing researcher profiles, networking, expertise discovery and more – with less administrative burden.

Introduction

In this white paper, we explore the growth of open science and consider its implications for research management and library professionals. Specifically, we examine how a research information management system (RIMS), such as Elsevier's Pure, can help these roles respond to the opportunities and challenges associated with four common open science use cases:



The growth of open science

While definitions of the term 'open science' vary, most agree that it describes new and more transparent ways of working, collaborating and sharing, often supported by technology. A key goal is to ensure that everyone can access, participate in and benefit from science. Another plus point for many is that open science has the potential to combat the rising concerns over reproducibility in research.[1]

Two of the most regularly mentioned strands of open science are open access publishing and open data, but it encompasses a broader range of research and learning needs; for example, open educational resources, open citations and open peer review.

The move towards open science has been gathering pace in recent years, driven, in part, by national and regional initiatives. A number of these have been introduced by funding bodies; for example:

- Awards issued by the US National Institutes of Health (NIH) and UK Research and Innovation (UKRI) contain conditions around the sharing of research data and the communication and accessibility of research results.

- The Australian Research Council (ARC) requires applicants to include a data management plan in their submission, and encourages researchers to deposit the research data generated by ARC funding in publicly accessible repositories.

Specifically, many funders now require research findings to be published open access (OA) in some form. For some, this is linked to their membership of cOAlition S, originally an organization of largely European funding organizations and charitable bodies. Back in 2018, cOAlition S launched Plan S, an initiative designed to make full and immediate open access to all research publications a reality. The past few years have seen the influence of cOAlition S grow globally, with membership expanding to include international and North American funders, along with the World Health Organization. Transformative agreements are one of the routes that cOAlition S supports for achieving its 100 percent OA target. These agreements commonly describe a shift in the contracts drawn up between publishers and institutions or consortia, from 'pay to read' to 'pay to publish and read'. This has created a raft of new considerations for institutions and the library and research management teams responsible for implementing the agreements.

Global crises, such as climate change and the COVID-19 pandemic, have also seen support for open science surge; many believe it is the key to finding solutions to these pressing societal issues. In particular, the sharing of research data has grown dramatically; for example, during the pandemic, healthcare researchers and workers were posting information online with a "new sense of transparency and at speeds that have not been seen before."[2] More than three quarters (76 percent) of COVID-19 publications were published open access between January and October 2020, compared to 43 percent of diabetes and 40 percent of dementia papers over the same period.[3] The posting of preprints (preliminary research papers that are shared publicly before peer-review and publication in an academic journal) has also risen sharply.

In response to this new and unprecedented level of openness, the US' Office of Science and Technology Policy issued an update to its policy guidance in August 2022, designed to improve public access to federally-funded research results. The update noted that COVID-19 had been a "powerful case study on the benefits of delivering research results and data rapidly to the people." And it added that: "The insights of new and cutting-edge research stemming from the support of federal agencies should be immediately available—not just in moments of crisis, but in every moment."[4]

For many library and research management professionals, finding effective ways to track, capture and report on open research outputs, while checking that funder and institutional policies have been met, is proving challenging.

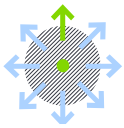
New research landscape = new opportunities

According to the global library organization OCLC, the aggregation, curation and use of information about research, commonly known as research information management (RIM), offers libraries "new opportunities to support institutional and researcher goals." This is because RIM intersects with "traditional library services in discovery, acquisition, dissemination, and analysis of scholarly activities." And it does this through faculty workflows, partners, and, importantly, institutional data systems.[5]

These systems that support research information management, or RIMS, work by integrating and linking the full range of research elements and processes that comprise the research ecosystem. They also centrally store that data and provide access to it through a single interface for:

Analysis

Reporting



Research showcasing and communication

These data and the insights they generate can be used by institutions to enhance research strategy, global reputation, international collaboration and funding.

Crucially, RIMS are playing an increasingly important role in supporting the ongoing shift towards open science.

For the library professionals and research administrators who manage these systems, RIMS are proving a powerful tool to support institutional open science goals. For many librarians, using them in this way has enabled them to demonstrate their expertise in new ways, grow their existing role and responsibilities, and showcase the value they add.

In this white paper, we explore four key open science use cases and consider how Elsevier's research information management system Pure can help to address them. We also hear how institutions have been leveraging Pure to comply with new open science mandates, workflows and reporting requirements, advance open science, and reduce the administrative burden on their teams.

Use case 1

Monitor and manage research data

The term ‘research data’ generally refers to the results of observations or experiments that validate research findings, but which aren’t published as part of a journal article. Research data can include raw data, processed data, software, algorithms, protocols, methods and materials.

The past few years have seen rapid growth in the appetite for making research data publicly available.

This has been led, in part, by mounting support for open science, concerns over research integrity, and the launch of initiatives such as the FAIR Principles; a set of guidelines that seek to make digital assets **F**indable, **A**ccessible, **I**nteroperable and **R**eusable. At the same time, many want to see researcher evaluation expand beyond article and citation counts to include factors such as societal impact, and their support for open science – including open research data.

In response, the number of open data repositories has risen sharply, along with open data requirements attached to research funding. And many involved in the research ecosystem have adopted new research data guidelines and practices. For example, several funders now ask researchers to not only publish data associated with experiments, but to deliver detailed data management plans alongside their funding application. Publishers, such as Elsevier, now often encourage researchers to include a data availability statement (also called a data access statement) with their journal submission, which informs the reader whether the data behind a research project can be accessed and, if so, where and how. Institutions are also launching their own research data policies, with many requiring research data to be made publicly available, wherever possible.

For institutions, these policies can create challenges - tracking their researchers’ compliance with research data funding mandates, and understanding where their research data has been hosted, isn’t always easy. But, as we’ve seen, the policies can also create opportunities. This is particularly true for library and research management professionals, who are already experts in so many of the skills required for good data management, from ensuring and monitoring quality to dissemination and discoverability. In addition, they are experienced in using the systems so important to research data management, including RIMS.

Monitoring and managing research data

Supporting and tracking open access publishing

Increasing the visibility of researchers and their work

Evaluating progress towards open science goals

How Pure can help

Pure enables institutions to document the research data being published by their researchers and, importantly, link datasets to individual researchers. This brings a range of benefits, including:

The ability to publicly **demonstrate the breadth of data** that institutions are generating and their commitment to open sharing.

The option to **incorporate the data** into researcher evaluation processes.

Insights into which **external repositories** researchers are using.

Opportunities to **enrich existing research analyses.**

Access to data required for **compliance with reporting requirements** at a national, regional or institutional level.

But Pure not only captures research datasets, it also tracks their relationships to other research outputs. For example, it highlights which research articles a dataset is related to, which grant, and the publications it has been mentioned in. Pure also helps institutions understand whether a dataset is an iteration of an earlier version.

In addition, Pure offers deep integration with external open access (OA) databases and open data repositories. For example, Pure exchanges metadata with OpenAIRE, the Open Access Infrastructure for Research in Europe; this makes datasets more available and (re)usable and helps institutions comply with requirements from funders, such as the European Union.

To enable the enrichment, monitoring and management of datasets for OA compliance, including with OpenAIRE's mandatory fields, Pure enables users to add license information at the record and file level. And the OpenAIRE compliance check feature makes it easy for institutions to confirm whether a particular dataset meets the organization's requirements *(see figure 1)*.

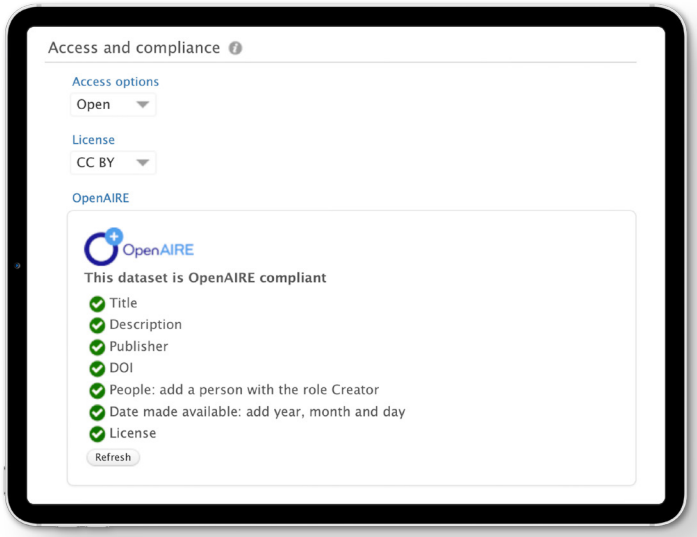


Fig. 1 *The OpenAIRE dataset access and compliance overview screen in Pure.*

REGISTERED DataCite SERVICE PROVIDER

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Data Monitor

Pure is also integrated with DataCite, a platform that seeks to improve data citation. This integration enables Pure to *indirectly* harvest datasets from DataCite. When integrated with Elsevier's Data Monitor, Pure can *directly* import datasets from DataCite and automatically harvest the associated metadata, saving institutions much time and manual effort *(for further details on this functionality see Appendix, Link 1)*.

Pure is also one of a small number of DataCite registered service providers, a status that enables researchers and research managers to register (create) DOIs in DataCite directly from Pure. This ensures that their datasets are not only discoverable, but that they can be cited and recognized as part of the institution's body of work.

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Drawing on the power of the RI portfolio

Pure can also be integrated with other solutions in Elsevier's Research Intelligence portfolio, empowering the sharing of content between platforms. In the case of research data, there are two key solutions:

- Data Monitor
  which draws on millions of research data records from more than 2,000 generalist and domain-specific repositories to find, clean, enrich and deliver an institution's entire research data output.

- Digital Commons Data
  a secure and trusted repository to publish datasets following the FAIR principles.

Pure has the ability to automatically import dataset metadata from both solutions and link them to specific people, organizational units, publications and other research entities. These data can also be showcased in the Pure Portal.

"Now that Data Monitor is integrated with Pure, our Pure Portal is starting to show a much fuller picture of our research. It makes Pure more complete in all the aspects important to a modern researcher. And it's visible for everyone to see."

– Christina Elsenga, Scientific Information Specialist, University of Groningen, The Netherlands (taken from the case study *How Groningen is drawing on the insights gleaned from Data Monitor to shape strategic thinking)*

Read the full case study >

Case study

Leveraging Pure for research data management

In 2019, the Australian Code for the Responsible Conduct of Research came into effect, with guidelines around how research data are stored, accessed and shared. Importantly, it places the onus of compliance on institutions and individual researchers.

In response, Australia's University of Canberra partnered with Elsevier's Integration Delivery Services team to build a sophisticated research data management framework with Pure at its heart.

The framework draws on Pure's deep integration capabilities to connect it with other systems and platforms that automate key tasks throughout the research lifecycle, saving researchers time and increasing compliance. The other systems are:

- **Data Monitor**
- **Digital Commons Data**
- **ReDBox** (helps universities collect information and metadata about research projects across the institution)
- **Infonetica** (automates and streamlines processes related to research ethics throughout the project lifecycle)

The result is an end-to-end and streamlined research data management process for all researchers at the University of Canberra. This empowers them to create high-quality data management plans (and implement them), and reduces the time spent complying with research data requirements.

Use case 2

Support and track open access publishing

When an article is published open access (OA), it is made freely available for others to access and, if applicable, reuse. How it can be repurposed is decided by a license, e.g., one of the Creative Commons copyright licenses. As we've seen, funders are increasingly driving uptake of open science, and, in many cases, that involves requiring research articles to be published OA in some form. But there is also an appetite among researchers and their institutions for open access – some strongly believe that research funded by taxpayers should be freely accessible to those taxpayers, while others see it as a way to ensure that researchers from less developed countries can access vital information. For some, open access offers a useful route to ensuring their own work is more widely read and potentially cited.

Whatever their motivation, researchers wanting to publish open access have a variety of journal OA models to choose from. These include:

- **Fully gold journal:** Every article is published under the 'gold' OA model, which means it is immediately, permanently and freely available to everyone. The publishing costs are covered by the author paying an article publishing charge (APC), which varies per journal.
- **Hybrid journal:** Largely funded by subscription fees, these titles also offer authors the option to pay an APC to publish their individual article (gold) open access.
- **Diamond or platinum journal:** Every article is published (gold) open access. The journal receives sponsorship or subsidies that enable it to make publishing and reading free.
- **Delayed open access journal:** The final version of the article is free to access in a subscription journal after an embargo period, which varies per journal.
- **Green open access (self-archiving):** The author can post online the peer-reviewed version (not the final version) of their subscription article after an embargo period, which varies per journal.
- **Bronze open access:** Generally, no APC is paid, but the publisher makes the article freely available to read, either immediately or following an embargo. However, the article usually lacks a formal license for reuse.

In addition, researchers have the option to share their research via preprint servers, (typically gold) open access digital archives or repositories that host these early and unreviewed 'preprints' of research articles. Because there are no editorial services provided, authors aren't charged an APC. As discussed, use of these channels has rocketed since the pandemic; for example, *Nature* reported that of the 100,000+ pandemic-related articles published in 2020, more than 30,000 were preprints.[6]

For many institutions, open access publication targets are now an important element of their research strategic plans. For their research management teams and libraries, being able to track and report on progress towards these targets is essential. So too is the ability to easily trace and import their researchers' OA content into other systems, such as institutional repositories, and monitor their compliance with funding body OA mandates.

Also vital is having the knowledge at their fingertips to respond to researcher enquiries around institutional and funder OA polices, and OA publication options.

This is an area in which the RIMS can play a vital role. As the OCLC notes:

> "RIM systems are increasingly supporting the open access deposit and discovery of locally produced research publications and datasets… This may be facilitated through RIM workflows that support researcher self-archiving into a separate repository, manual support by the library, use of the RIM system itself as a repository, or in combination."[5]

How Pure can help

1. Find and import OA content

Pure is integrated with key open access databases. These include:

- Unpaywall: An open database of 46,288,226* free scholarly articles
- CORE: Described as the world's largest aggregator of open access papers
- DOAJ: The Directory of Open Access Journals containing 8,495,740* records

In addition, it pulls content from the preprint servers bioRxiv, medRxiv, arXiv and SSRN.

Pure can automatically import metadata on open access articles from these sources, removing the need for librarians and/or research teams to manually locate OA publications *(for further details on this functionality see Appendix, Link 2)*. This not only saves teams time, but reduces the risk of data duplicates and errors creeping in.

2. Track (and encourage) compliance with OA requirements

Pure has a range of features designed to help institutions ensure their researchers are meeting OA policies and mandates.

The terms of those OA requirements – whether institutional or funder – can vary widely. Some want the research to be made immediately and freely available under the gold open access publishing model. Others specify that it must be accessible within a certain timeframe following publication; for example, in the case of the US funder NIH, the article must be posted to its PubMed Central database within 12 months of publication. Other policies simply require that an earlier version of the article is deposited in a publicly accessible repository.

As we've seen, Pure can help institutions locate their OA publications – a crucial first step on the road to OA mandate compliance. But it can also help in other important ways. For example, an increasing number of libraries and research offices are turning to their institutional repository (IR) to comply with the public sharing aspect of OA policies. Full text OA articles loaded to Pure can be automatically imported into the IR, greatly reducing the administrative burden for librarians and researchers.

Through its reporting module, Pure enables institutions to monitor their researchers' open access outputs and their compliance with relevant policies. These OA reports can also be used externally; for example, for government or funder assessments.

"Pure's strong data model and user-friendliness has made it a popular resource on campus. It is not only saving librarians' time by enabling them to collate reports efficiently and with ease, it's also helping build relationships across campus, delivering benefits such as improved communication and support, and a clearer overview of research activities."

– Jan Fransen, Service Lead for Researcher and Discovery Systems, University of Minnesota, U.S. (Retired) | Founding member of the Pure North American User Group

[Pure] is as easy to use as Facebook… Lots of features are very, very useful on the platform, but from…an administrator perspective, one of the best systems is the report. It's helping my life when I have to deliver some reports to a dean, or to a user, or to the director of the platform."

– Bernard Detrembleur, Research Information Manager, University of Namur, Belgium

* This data was extracted on January 20, 2023.

Pure's open access report workspace displays a variety of relevant OA-related data, such as the OA status of a journal and its APC. As with all Pure's reporting workspaces, it also enables institutions to create 'data stories', and visualizations that provide new insights into the data. For example, it is possible to see how OA outputs are distributed among different organizational units, departments or research groups, and to discover how many outputs have available electronic versions.

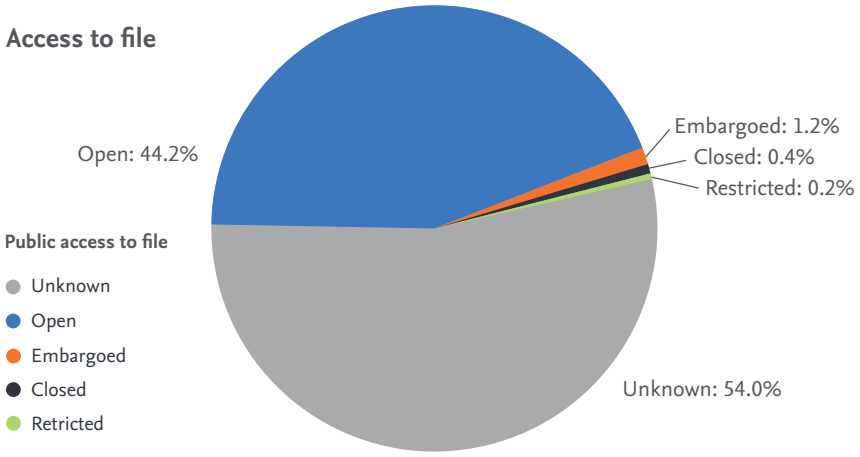


Fig. 2
A sample data story visualization created for a Pure report. This example shows the OA status of an institution's publications.

Open access policy

282 Rows Limit table rows to 50 Arrange Columns Export

JOURNAL BY SHERPA ROMEO OA POLICY(G)	NUMBER OF RESEARCH OUTPUTS SPLIT BY OA STATUS				
	Open	*Embargoed*	*Closed*	*Indeterminate*	*None*
Total count	**154**	**0**	**2**	**361**	**82**
Asthma Research and Practice	0	0	0	1	0
Implementation science communications	0	0	0	1	0
American Chemical Society, Polymer Preprints, Division of Polyr	0	0	0	0	1
American Biotechnology Laboratory	0	0	0	0	1
Journal of Macromolecular Science - Physics	0	0	0	1	0
Journal of Chromatography A	2	0	0	10	0

Fig. 3
A sample data story table created for a Pure report. This example features OA data for journals that the institution's researchers have published in, which also have a policy summary in Sherpa Romeo.

And Pure's overview screen ensures administrators can easily scan the open access status of all research outputs in the system *(for further details on this functionality see Appendix, Link 3).*

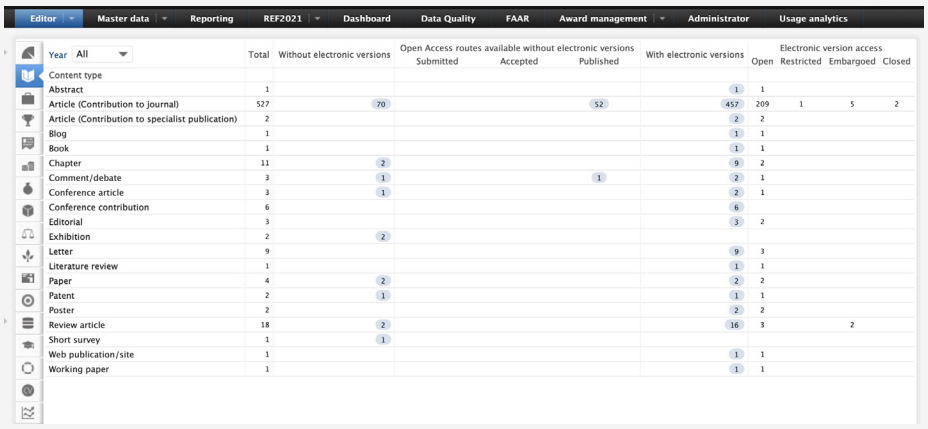


Fig. 4
Pure overview screen showing the article availability of an institution's research outputs.

This feature, along with the range of OA-related filters in Pure, makes it simple to determine which articles don't have an openly accessible copy available.

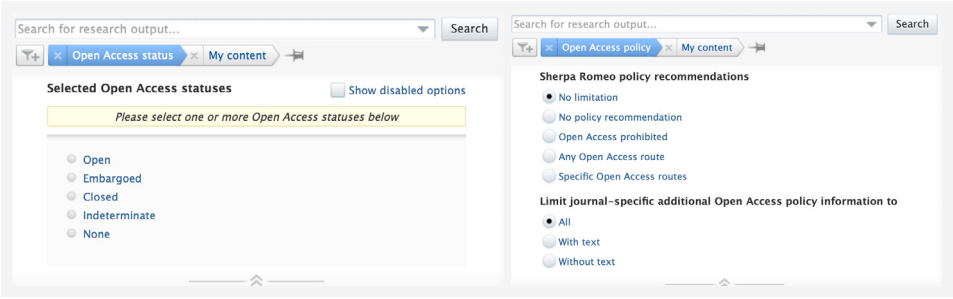


Fig. 5
Pure has a wide range of filters that administrators can use to track and manage OA content. These include OA status filters (left) and OA policy filters (right).

Pure administrators can also use these options to swiftly identify articles missing links, DOIs or files.

To improve open access compliance, Pure administrators have the option to trigger automated 'nudge' messages, which remind researchers to add full-text files to content that is potentially OA. The reminder title and message body can be customized to point researchers to their own institution's resources.

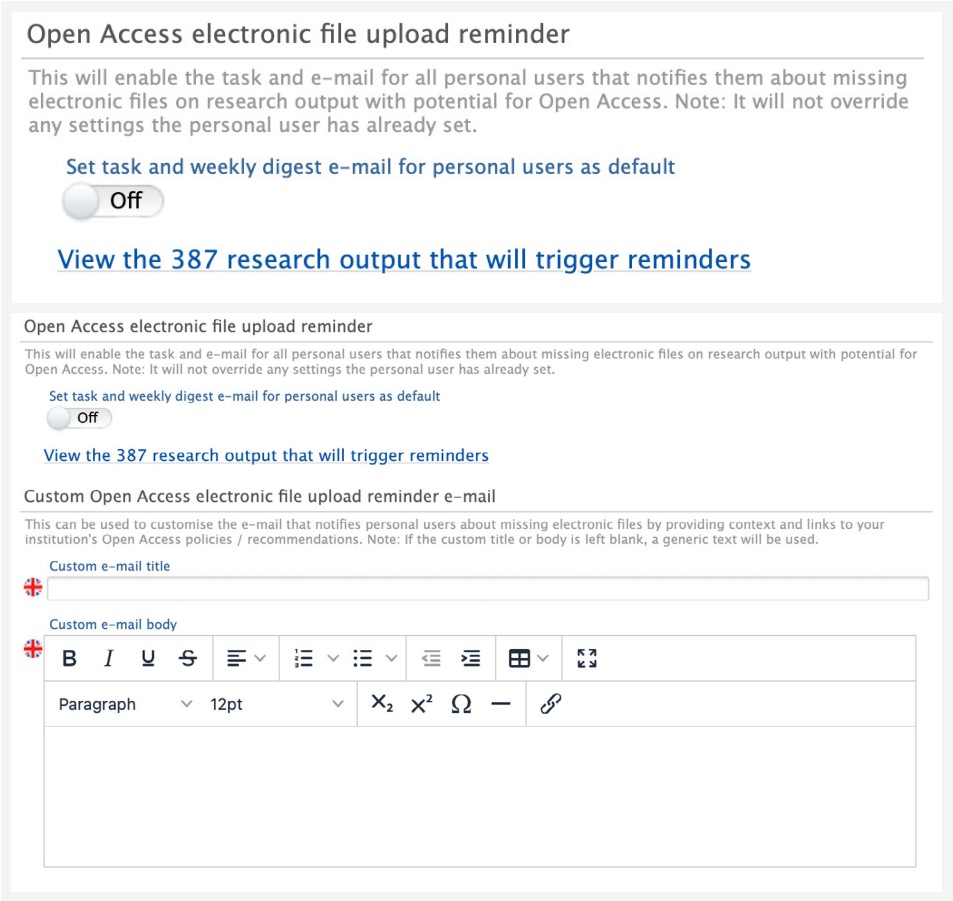


Fig. 6
Pure offers administrators the option to 'nudge' researchers to upload their electronic files using scheduled email reminders (top) with customized email headers and texts (bottom).

And to make tracking of OA licenses simpler for institutions, when loading their articles to Pure, researchers can indicate which commercial or non-commercial Creative Commons license they selected – the list includes URLs to access the terms of each license. Other license types (and associated URLs) can be manually input. Where license information is available at the source, it is automatically imported into Pure and linked to the DOI of the imported record.

3. Advise on open access options and policies

When seeking advice on where to publish, librarians are often researchers' first port of call. And when they want to publish open access, that advice can be particularly valuable to navigate the many options on offer. Pure draws in data from Sherpa Romeo, an online resource that aggregates and analyzes publisher copyright and open access archiving policies. Sherpa Romeo generates summaries of these policies on a journal-by-journal basis, which are then imported into Pure for librarians and researchers to view. It is also possible to apply filters in Pure based on Sherpa Romeo policy recommendations, open access restrictions and open access routes. In addition, Pure highlights whether journals are indexed in the Directory of Open Access Journals (DOAJ), a trusted index of OA titles.

To keep researchers up-to-date on their own institution's OA policies, Pure has created a dedicated section that administrators can use to communicate OA-related recommendations *(for further details on this functionality see Appendix, Link 4).*

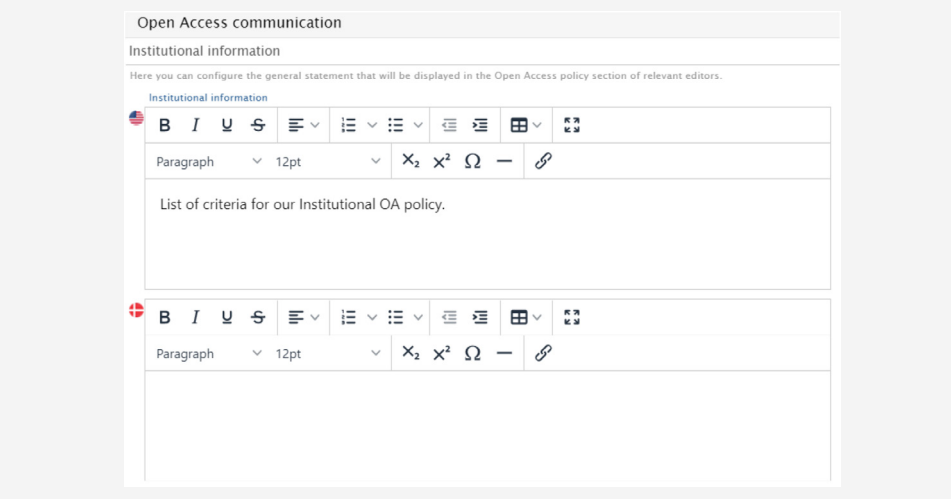


Fig. 7
An administrator-configured template for in-product messaging featuring institute-specific OA policies and recommendations, and links to resources.

This makes it easy for them to ensure that researchers receive the most relevant OA references and guidelines at the right moment in their workflow. The section also includes Sherpa Romeo recommendations.

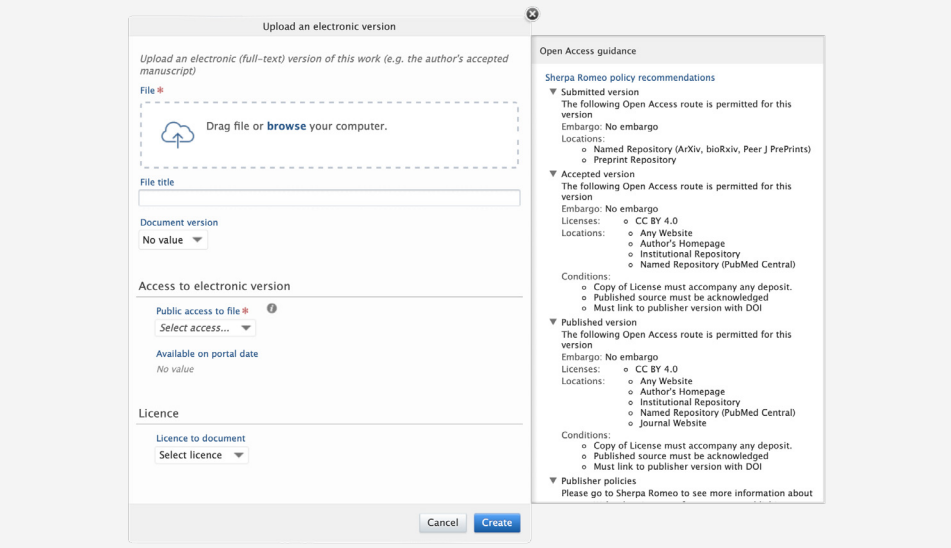


Fig. 8
An administrator-enabled interactive guide draws on Sherpa Romeo data to help users identify possible OA routes, based on specific journal and publishing strategies.

Pure is also now largely compliant with Plan S institutional repository and publisher requirements around accessibility, interoperability and quality of data, and is working to resolve the last few gaps.

Use case 3

Increase the visibility of researchers and their work

One of the key goals of open science is to promote the open sharing of research. This involves not only ensuring that potential readers can easily access content, but making certain that content is discoverable. That means making sure that it is visible.

This concept doesn't only apply to research, but to researchers themselves. Another important aspect of open science is collaboration. According to Science Europe: "Open Access and data re-use increase the circulation of knowledge, spark innovation and foster collaboration on a global scale."[7] And that collaboration can take many forms, from the open sharing of information between academics and industry, to partnerships crossing country and discipline borders.

Open collaboration can be particularly helpful for developing or less research-intensive economies, providing them with access to much-needed funding, equipment or knowledge; an important step toward creating a more equal and inclusive research landscape.

As a result, finding effective ways to raise the profile of researchers, their research and its impact has become increasingly important for institutions. As has demonstrating to potential collaborators their commitment to open science.

Monitoring and managing research data

Supporting and tracking open access publishing

Increasing the visibility of researchers and their work

Evaluating progress towards open science goals

How Pure can help

The **Pure portal** provides a visually appealing way to showcase important elements of an institution's open science enterprise. In addition, content in the portal is openly accessible and easy to find via online search engines. OA outputs in the portal are clearly identified by an 'open lock' symbol and visitors can download OA articles directly from the portal.

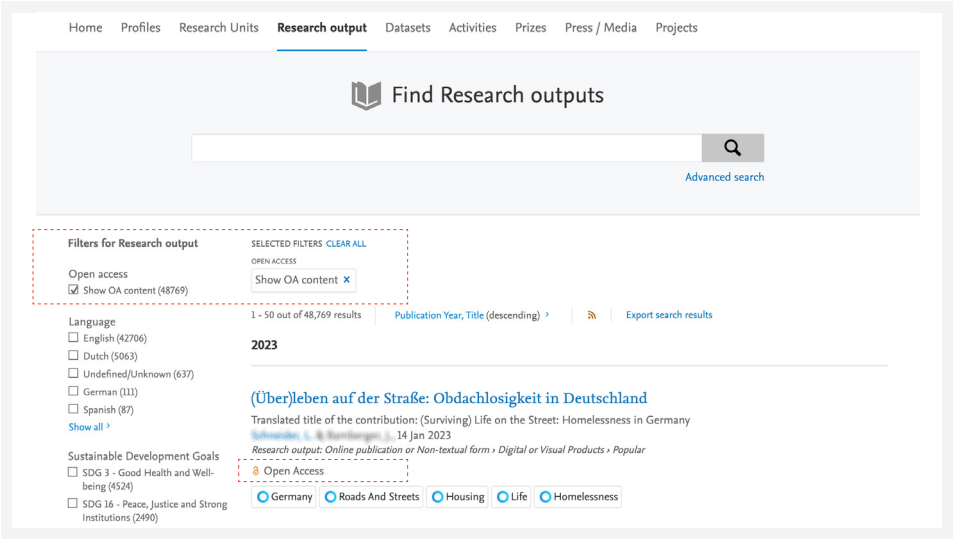


Fig. 9
The OA content filters available on the Pure portal.

When visitors select a research output, information on the access status of that output is provided (see figure 10).

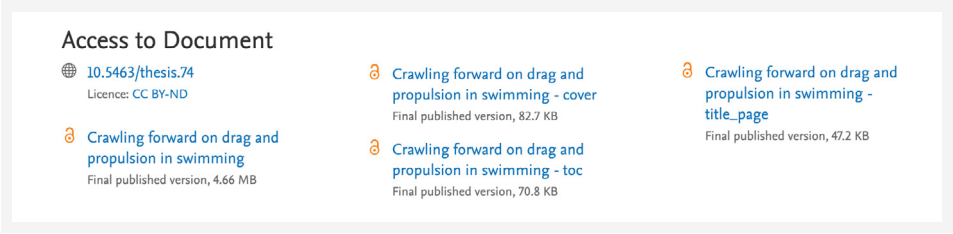


Fig. 10
The Pure portal provides information on the OA status of research outputs.

For documents and files that are still covered by an embargo, the embargo end date is given, along with a link to request a copy directly from the author *(see figure 11)*.

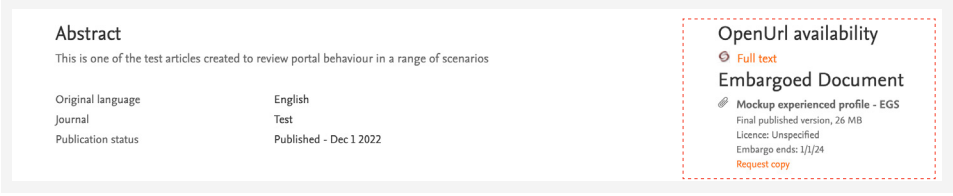


Fig. 11
The Pure portal also provides information on any embargos associated with a research output, and a link to contact its author.

Finally, 'quick links' in the Pure portal enable visitors to share outputs via channels such as Facebook, Twitter, LinkedIn or email at the click of a button.

Fig. 12
A blue 'quick links' menu makes it easy for visitors to share research outputs.

According to AESIS, the Network for Advancing & Evaluating the Societal Impact of Science, one important aspect of open science is its ability to further the impact of science in our society[8]. This refers to the reach of research beyond academia; for example, its positive effect on the economy, the environment or public policy.

But with societal impact notoriously difficult to measure, increasingly people are using contributions to the UN Sustainable Development Goals (UN SDGs) as a proxy indicator. On the Pure portal, a graphic highlights an institution's contribution to these 17 goals, with clickable options providing information on the researchers, research outputs and projects linked to each one. Pure can also show which SDG-related publications are open access.

"Pure is a solution that extends beyond the organization and accumulation of data. It has played a vital role in identifying the value in our institution's research output and increasing our institutional visibility."

– Michael Greil, Head of Research Information System, University of Vienna, Austria, (taken from the case study *A researcher-centric approach to research reporting and evaluation*)

"We, at Lingnan, are fully aware of the impact of research on shaping of our future society. Societal impact can only take place when people notice our researches. Lingnan Scholars is now the gateway, demonstrating to the world our strength and achievements in research. With better visibility of our research endeavours, we believe it could spearhead more knowledge exchange and collaboration from around the world."

– Prof. Joshua MOK Ka Ho, Vice-President, Lam Man Tsan Chair Professor of Comparative Policy, Lingnan University, Hong Kong (taken from the case study *Unlocking Liberal Arts Research Potential With PURE*)

Read the full case study >

Case study

Supporting collaboration and societal impact

When COVID-19 emerged, the Galveston National Laboratory (GNL) in Texas, USA, was among the first to respond. In addition to being home to experts on the coronaviruses MERS-CoV and SARS-COV (both close relatives of COVID-19), the lab's researchers helped to set up China's maximum biosecurity lab in Wuhan – the same lab that identified the new coronavirus strain.

With the GNL researchers and medical teams so active, the lab's Research Development Specialist Melodi Moore needed a way to showcase their virus expertise and key collaborations to support a coordinated response to the global threat.

Pure swiftly responded to the pandemic with the launch of a dedicated COVID-19 banner, an optional feature that institutions could display on the homepage of their Pure portal. Clicking on the banner led visitors to a landing page, where, thanks to a powerful, easy-to-tweak and transparent search string, only virus-related information was displayed. It ensured that relevant researcher profiles and research on COVID-related topics were easy to find and review. According to Melodi:

> "I don't know what we would have done without Pure during COVID-19. We used it so much, from reporting on our work to showcasing our experts."

The Pure portal also supports collaboration by highlighting an organization's research networking capabilities. The homepage features an interactive map, which shows, at a glance, an institution's partners, where they are based, and key collaboration topics.

This is complemented by the portal's profiles tab, which showcases the unique expertise of researchers in a search-friendly form, making it easy for potential collaborators to find them via Pure or online search engines, whatever their discipline or location. Filters enable visitors to refine the list of researchers by UN SDG contribution or area of expertise, while the portal's research output tab offers access to the institution's research content, with the option to filter on open access and UN SDG-related publications.

Together these portal elements can advance an institution's open science goals by boosting visibility of research expertise, researchers and impact to strategic partners, governments and funders.

Pure's API also boosts the discoverability of an institution's content. It works interoperably with a variety of other systems by providing Pure data in a standard format that can be reused in their feeds. This supports key open science goals around access, transparency and reproducibility.

"A Pure profile says a lot about a researcher and offers a really effective and easy way to showcase them and their work. I recommend they link to their profile from their department webpage, in their email signature and in press releases – basically, anywhere they can place it where collaborators will link to it."

– Melodi Moore, Research Development Specialist, University of Texas Medical Branch Research Administration (taken from the case study *How UTMB leveraged Pure to promote and report on its COVID-19 response*)

Read the full case study

Case study

Making local language content more accessible

The Universidad del Rosario in Bogotá, Colombia, was eager to maximize the visibility of its research capabilities and encourage international collaborations, especially in the social sciences and humanities.

To do that, it needed to showcase some of the great work done by those teams. However, with much of it published in Spanish in non-indexed journals, that wasn't going to be easy. The lack of accessibility to the university's non-STEM content was highlighted when Rosario's former Technology Officer, Carlos Estévez-Bretón, was asked by a fellow attendee at an international conference about the accuracy of books and movies on Colombia's drugs trade. He knew that at least 70 percent of what was written and filmed was made up, but the research that supported that statistic was not available in English.

To increase accessibility and discoverability of the university's non-STEM findings, Estévez-Bretón and his colleagues turned to Pure. Papers are now translated and hosted on their Pure portal, which has increased visibility of the research in Google and other search engines, and opened the results to readers worldwide. This has not only raised the profile of research that can benefit other countries facing similar issues, but is helping the university to identify and attract potential collaborators.

Use case 4

Evaluate progress towards open science goals

While setting targets around open science drives wider adoption, analyzing progress towards those goals is just as vital.

For institutions, insights on open science performance can help with internal decisions around allocation of resources and funding. They can also provide valuable evidence of their open science commitment and achievements to potential funders.

Increasingly, countries are relying on these kinds of data to guide strategy too. At least 14 to date have introduced performance-based research funding systems (PRFSs). These programs evaluate the output and impact of research performed at a national level and aim to understand its wider societal impact. This is then used to guide funding decisions. For example, in the case of the UK's REF (Research Excellence Framework) PRFS, the data is gathered for three key purposes:

- To inform allocation of the circa £2 billion in public funding the four UK higher education funding bodies invest in research each year.[9]
- To provide accountability for that public investment and demonstrate the benefits it has generated.[10]
- To provide benchmarking information and establish reputational yardsticks with peer institutions and departments.[10]

The increasing pressure on many nations' R&D funding sources, and the growing maturity of existing PRFSs, has led some to predict a rise in the number of countries adopting these programs.

With their ability to integrate and link research elements and processes in a central location, RIMS are perfectly placed to provide the kind of evidence-based data that power effective reporting at every level.

How Pure can help

As we've seen in previous sections, Pure is home to rich and connected data on an institution's research outputs, researchers and impact. And with its comprehensive reporting functionality, Pure can turn that data into valuable insights on an institution's open science activities, from research data sharing and open access publishing to open collaboration.

RIMS

Centralized data
- Accurate & comprehensive
- Efficient & effective workflows

Better strategic decisions
- Comprehensive visibility

Better performance
- Increased funding
- Expanded collaboration
- Ehanced reputation

Alongside the integrations we've already discussed, Pure draws on patent data from LexisNexis PatentSight and media mentions from Newsflo. Used with the PlumX Metrics and data on the UN SDGs that Pure offers, these help to build a compelling picture of an institution's wider societal impact.

In the case of PRFSs, Pure delivers the breadth of data that these programs typically require. For example, the UK's REF assesses three distinct elements for each participating institution: "the quality of outputs (e.g., publications, performances, and exhibitions), their impact beyond academia, and the environment that supports research."[10] REF 2021 also requires that journal articles and conference proceedings based on research the program has funded are deposited in an openly available repository within three months of the paper being accepted.

Pure provides a large proportion of these data for the assessment phase of REF 2021.

Pure also has direct links to the official REF portal, enabling library and/or research teams to automate the submission process.

And to support compliance with the REF requirements around sharing of research, the Pure development team has designed functionality that helps institution administrators identify content missing full text information, and flag when the three-month deadline is approaching *(for further details on this functionality see Appendix, Link 5).*

"At our university, we have a few Environmental Science departments, but the faculty members are quite diverse. If we really want to focus on Environmental Sciences, we can use the Pure UN SDG information to identify leading scientists in the field, and then group them together in a virtual unit....The same Pure features could be used to guide the composition of undergraduate and graduate classes."

– Prof. Yong Sik Ok, Professor and Global Research Director at Korea University, Korea (taken from the case study *Why Pure has become the go-to solution for one of Korea's most influential researchers*)

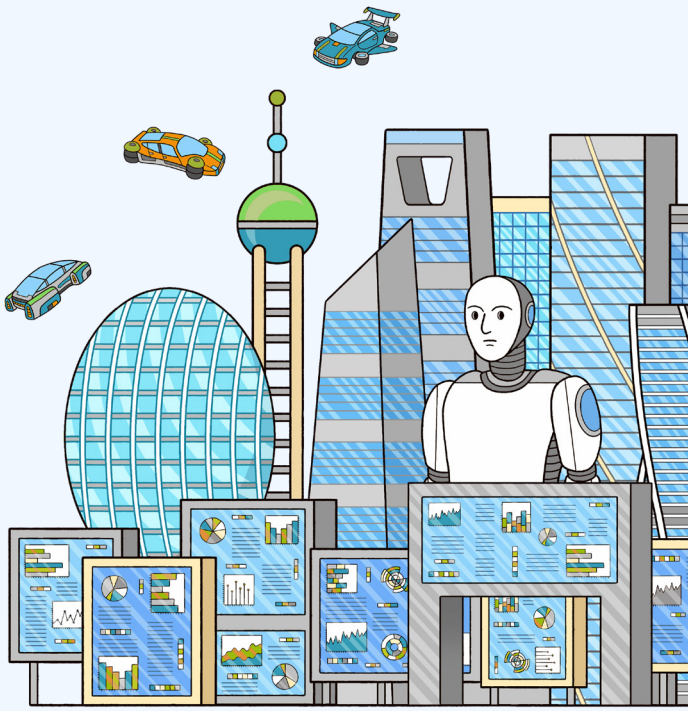
"Pure really helped us to solve a number of different business issues that we had and one of the things that it helps us with the most is managing our REF submission, which is really important to us in the UK at the moment. It also is a system that allows us to have a very high quality of data."

– Laura Turner, Research Systems Project Officer, The University of Manchester, UK

Conclusion

Open science will continue to grow in uptake and importance. For institutional research offices and libraries this will mean change, not only in terms of workflows but in how we understand the impact of research. As we've discussed in this white paper, RIMS can support that change in a wide variety of ways, from increasing the efficiency of reporting and compliance to raising the visibility of researchers, their work and your institution's reputation.

At Elsevier, ensuring that Pure not only meets, but anticipates the open science needs of the community is a key pillar of our development work. The Pure team are active participants in major initiatives euroCRIS, OpenAIRE, DataCite, ORCID, EARMA and INORMS, and we are well versed in transformative agreements and national initiatives. We will continue to draw on these relationships and knowledge to ensure that our plans and development strategies align with Plan S and other open science initiatives.



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Appendix: Links to Pure documents

The following links are hosted in a web environment developed for Pure customers. If you have yet to join the Pure community, but would like to learn more about one of these topics, please don't hesitate to contact the Pure team.

Link 1: Open Data and Pure https://doc.pure.elsevier.com/display/PureClient/Open+Data+and+Pure

Link 2: OA Relevant Import Sources https://doc.pure.elsevier.com/display/PureClient/OA-Relevant+Import+Sources

Link 3: Open Access Overview Screen, Filters and Tasks https://doc.pure.elsevier.com/display/PureClient/Open+Access+overview+screen%2C+filters+and+tasks

Link 4: Open Access Guidance Section https://doc.pure.elsevier.com/display/PureClient/Open+Access+guidance+section

Link 5: Open Access Compliance https://doc.pure.elsevier.com/display/PUREUK/Open+Access+compliance

Pure

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Data Monitor puts institutions in the driving seat of their Research Data Management journey by providing visibility on their institution's entire research data output.

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Tel: +31 20 485 3767

NORTH AMERICA, CENTRAL AMERICA AND CANADA
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SOUTH AMERICA
Tel: +55 21 3970 9300