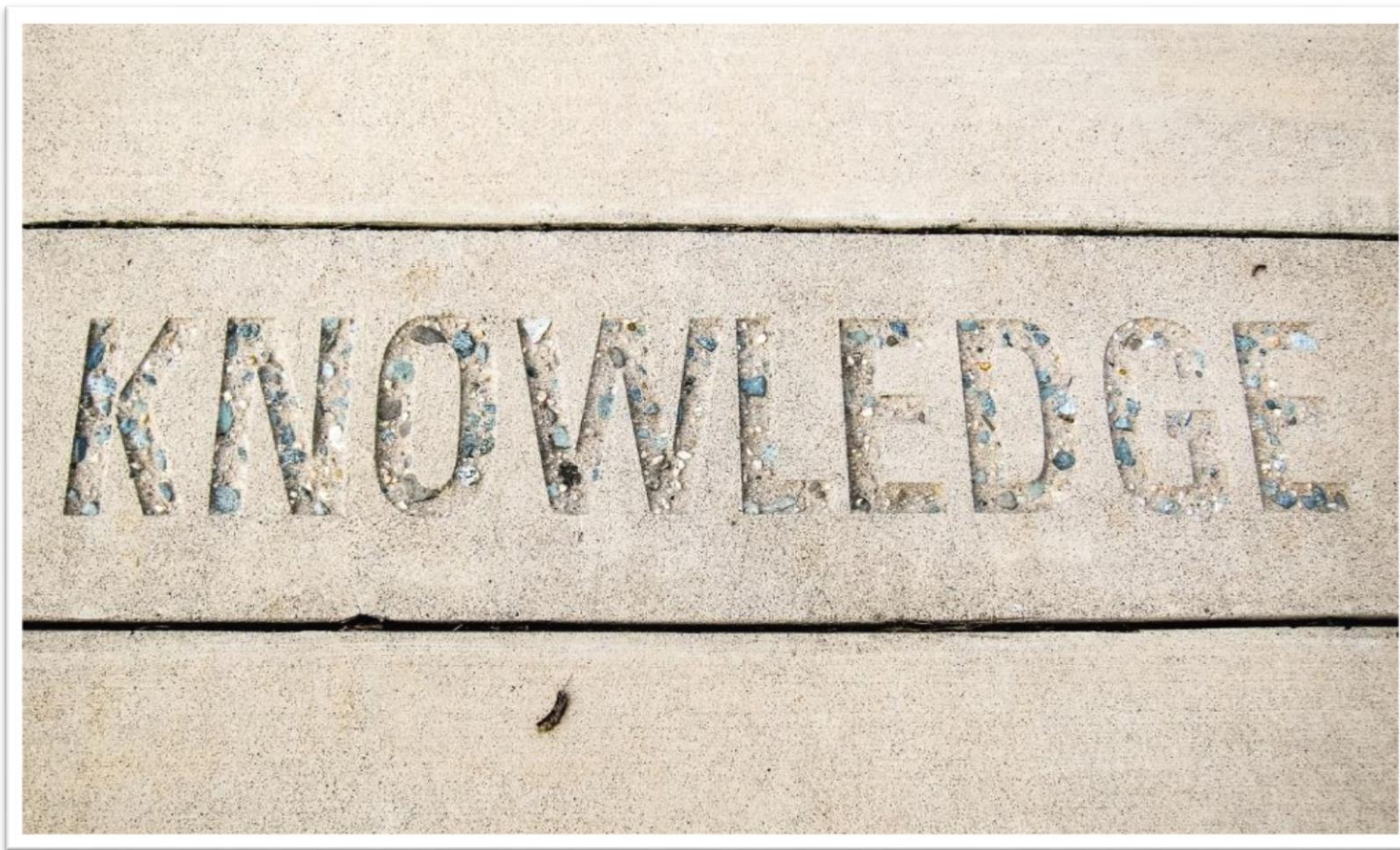


# Closing Keynote: Scholarly Communication and Research Services for a new Paradigm

Dr Torsten Reimer  
Head of Research Services

[Torsten.Reimer@bl.uk](mailto:Torsten.Reimer@bl.uk) / [@torstenreimer](https://www.instagram.com/torstenreimer)  
<http://orcid.org/0000-0001-8357-9422>

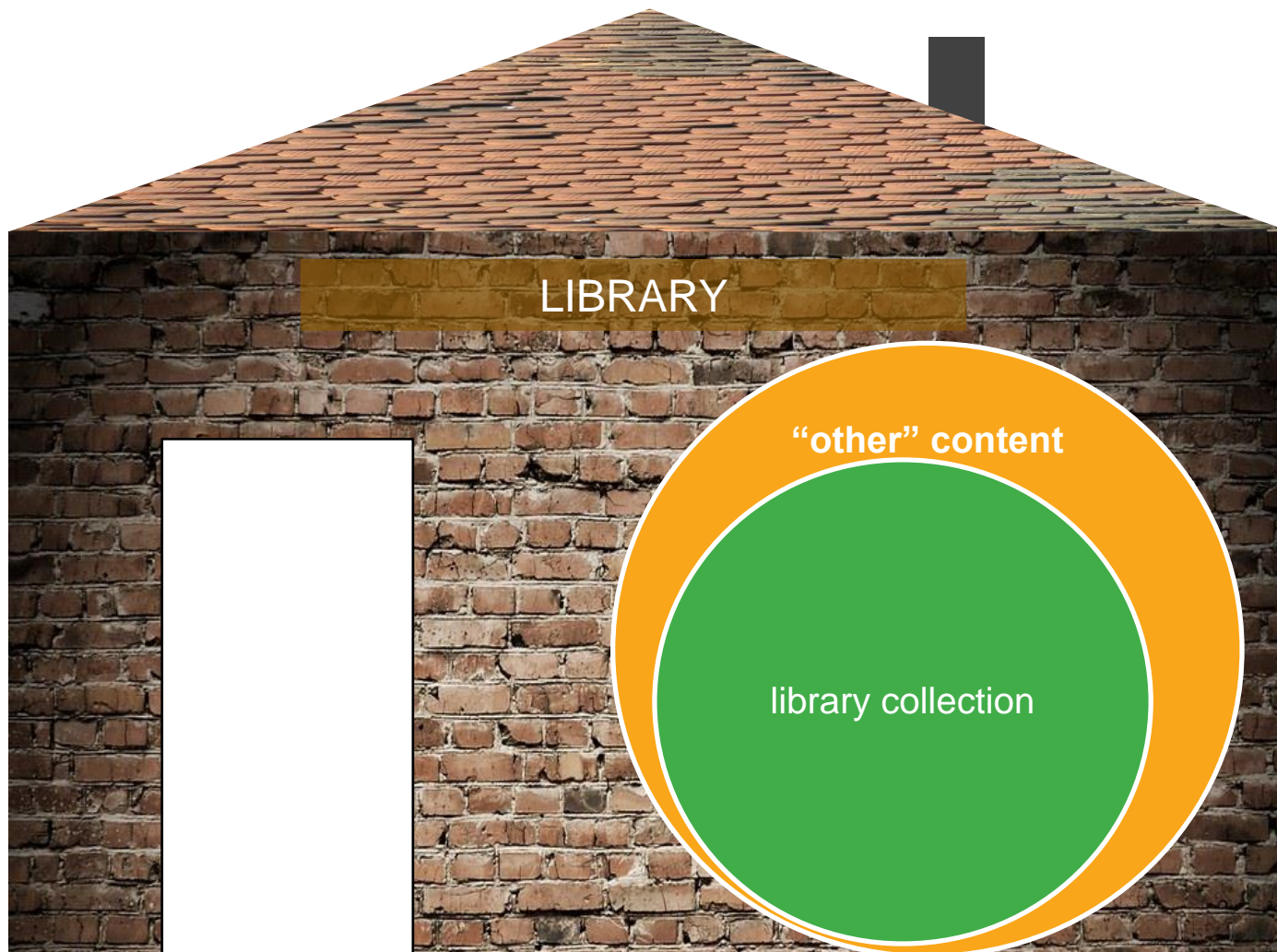
# Why are we here?



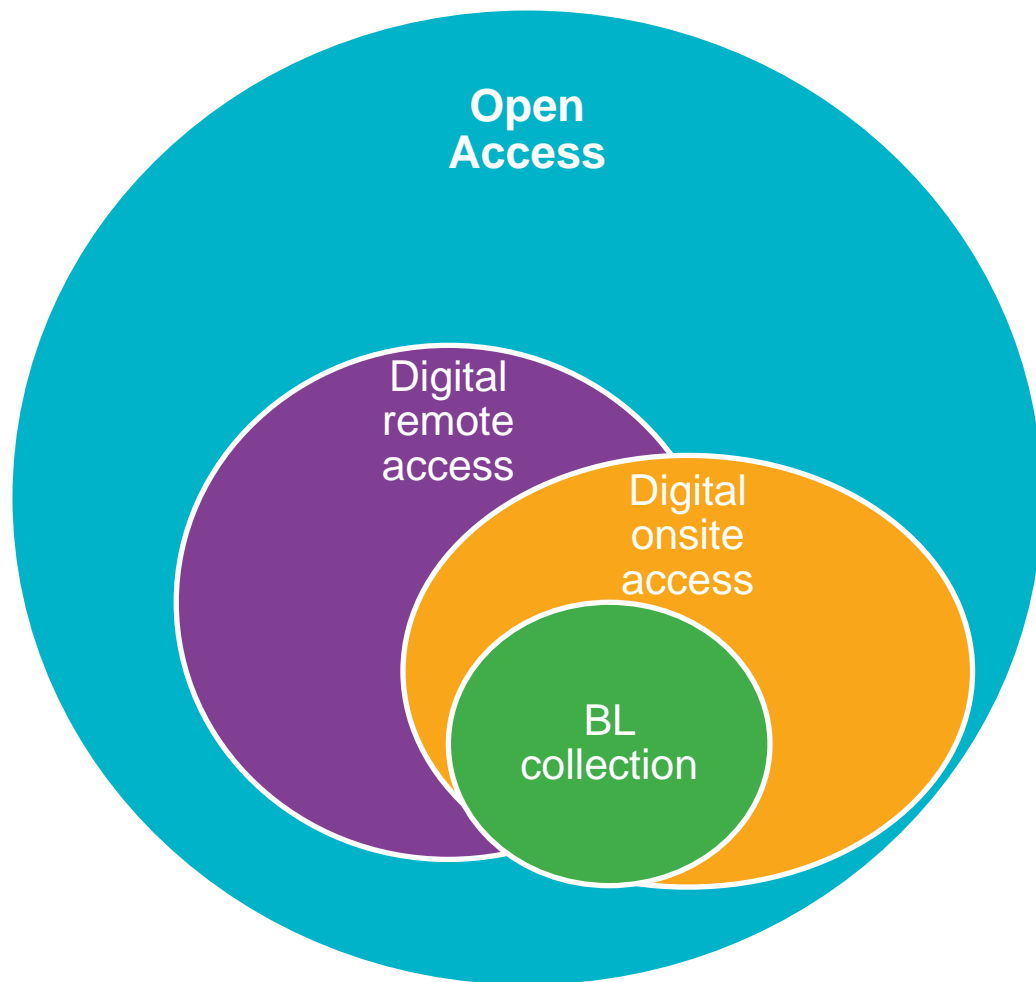
<https://www.flickr.com/photos/benimoto/1776983659/> CC BY 2.0

# The changing environment

Before: “buy it and they’ll come”



# Now: changing nature of collections



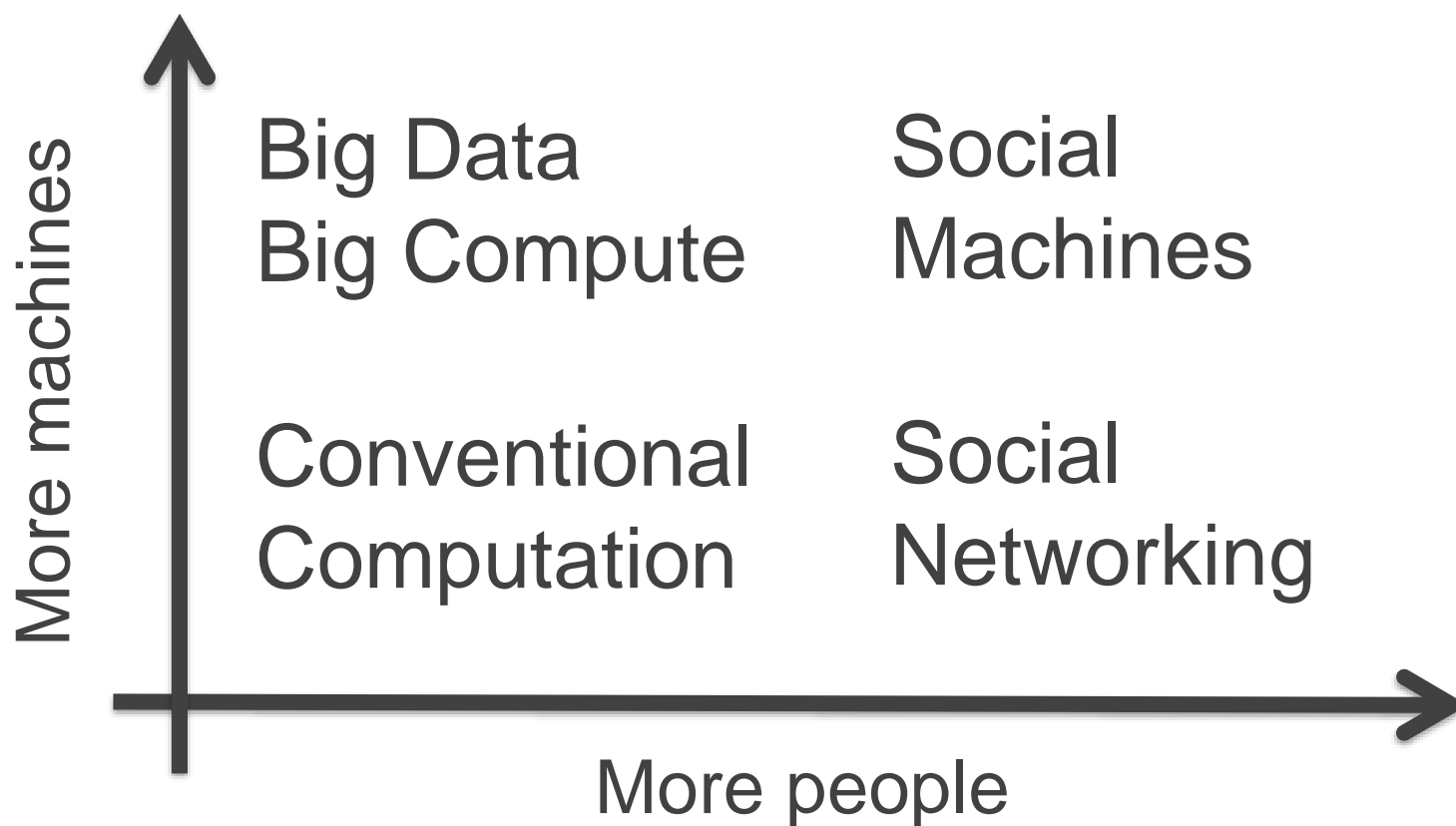
Relative to internet content our collections are shrinking

We can no longer hope to meet all user needs from our collections

Need to enhance our collections by connecting to relevant global content


Reconsider national collection models in a global open science world

# Context 1: New Ways of Working




Dave de Roure, Oxford

# Context 1: New Ways of Working



**SOFTWARE**  
Sustainability  
Institute



About
Blog
Community
Policy
Software
Training
Resour

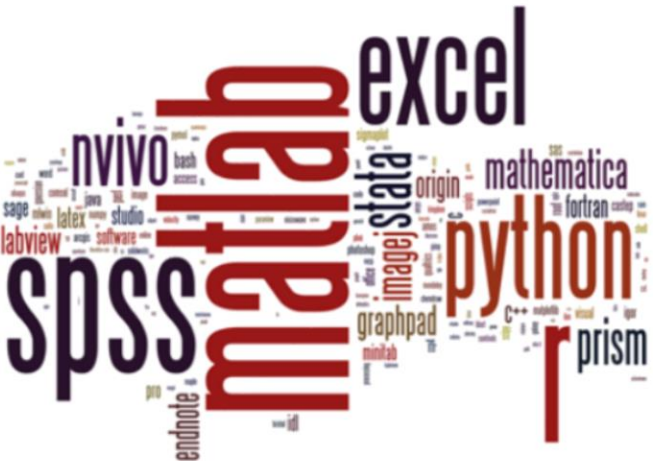
## It's impossible to conduct research without software, say 7 out of 10 UK researchers

By [Simon Hettrick](#), Deputy Director.

No one knows how much software is used in research. Look around any lab and you'll see software – both standard and bespoke – being used by all disciplines and seniorities of researchers. Software is clearly fundamental to research, but we can't prove this without evidence. And this lack of evidence is the reason why we ran a survey of researchers at 15 Russell Group universities to find out about their software use and background.

**Headline figures**

- 92% of academics use research software
- 69% say that their research would not be practical without it
- 56% develop their own software (worryingly, 21% of those have no training in software development)
- 70% of male researchers develop their own software, and only 30% of female researchers do so

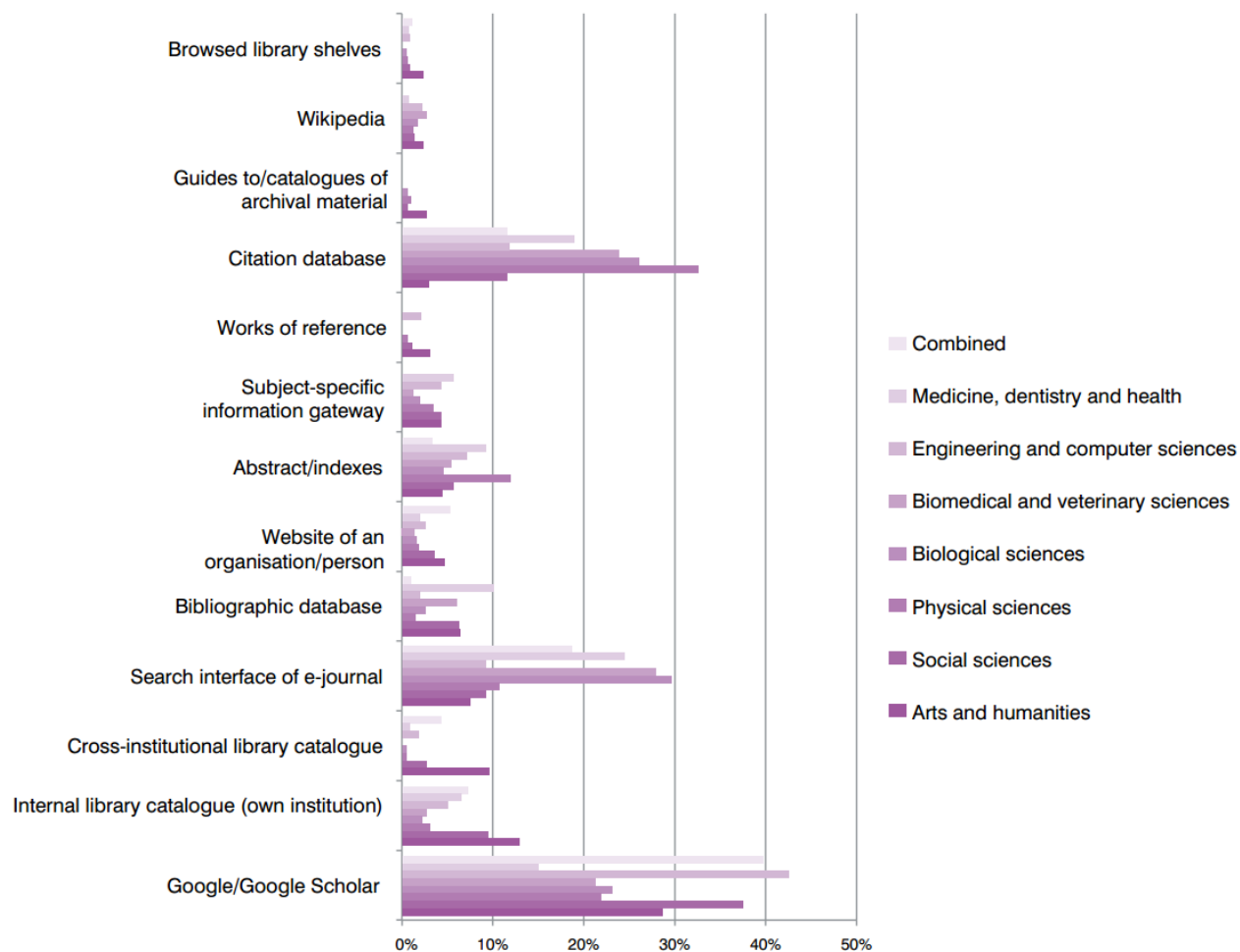


# Context 2: User Behaviour & Expectations



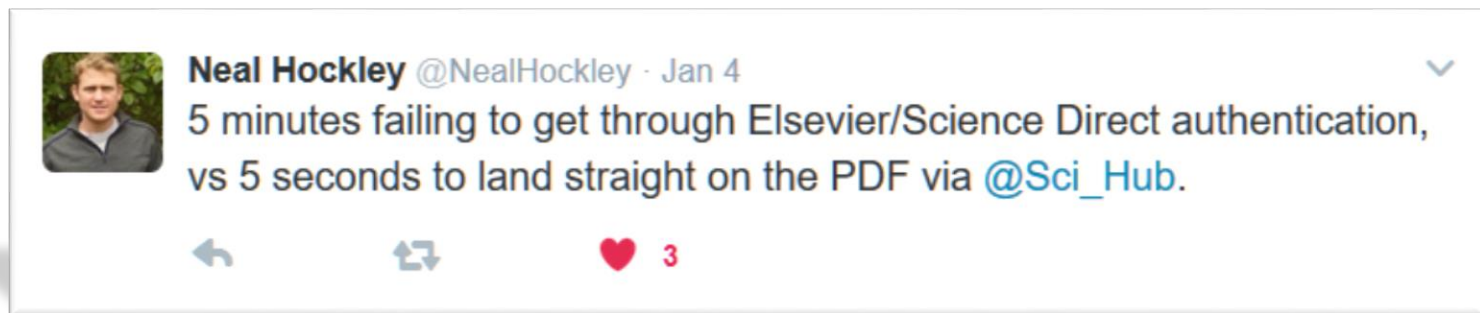
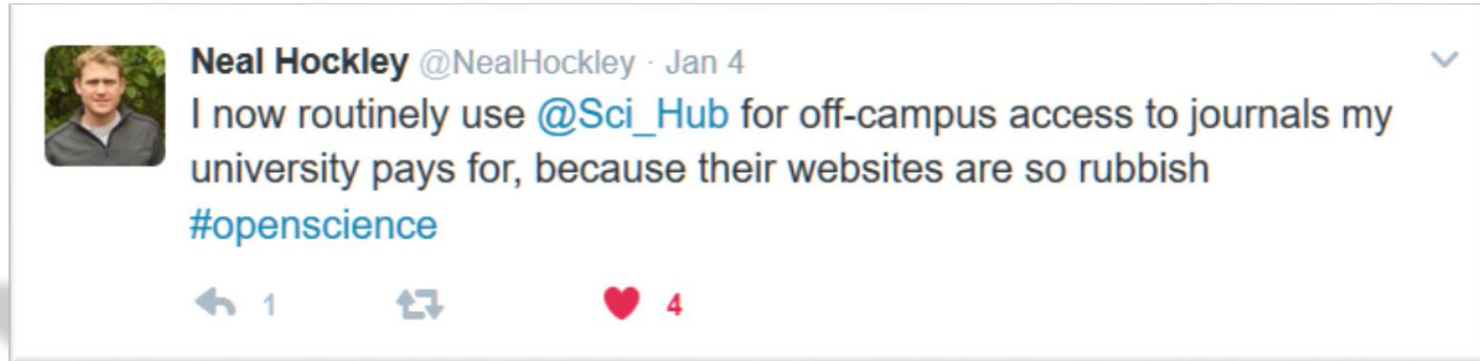


# Context 2: User Behaviour & Expectations



<https://www.jisc.ac.uk/reports/researchers-of-tomorrow>

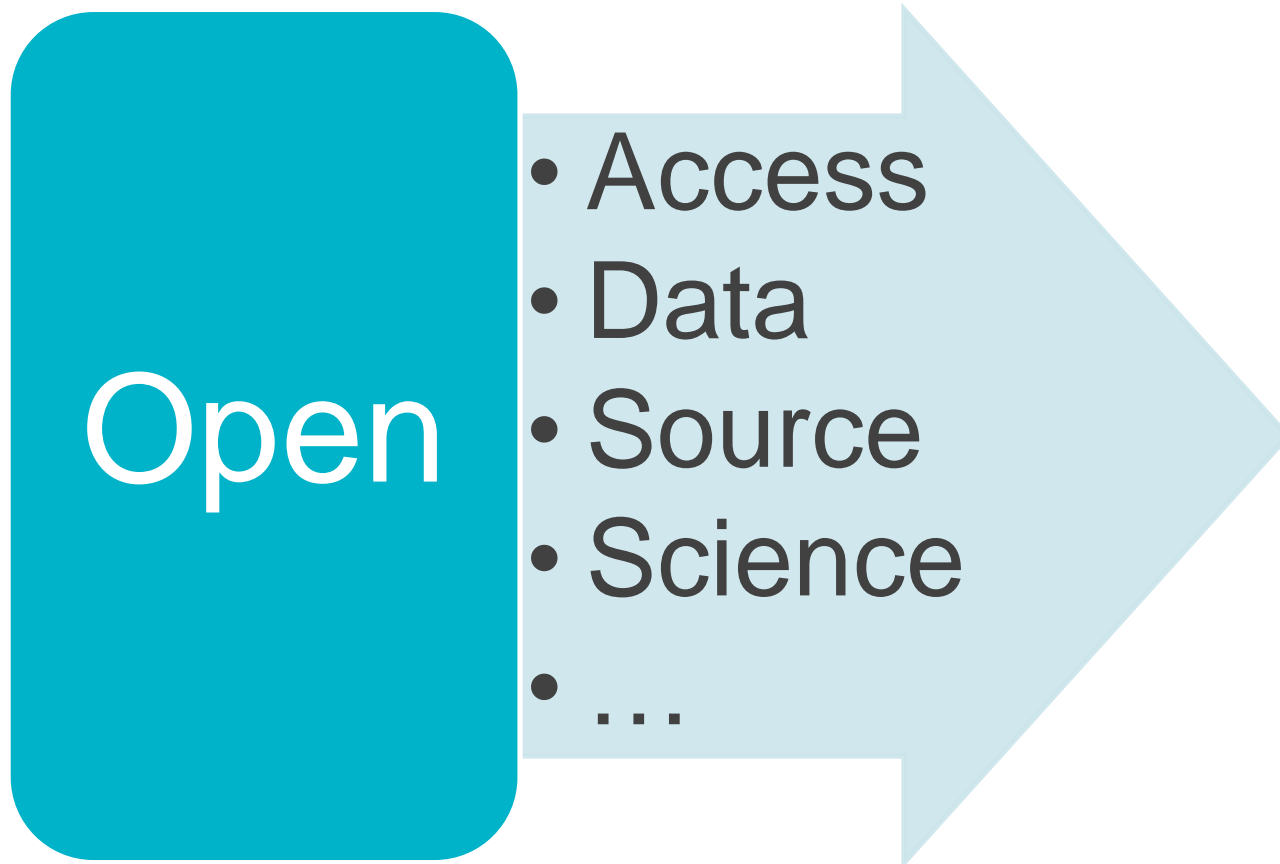
# Context 2: User Behaviour & Expectations



# Context 3: budgets and value for money



## Context 4: school comms & open science



# Challenges of a changing environment



Research is digital, are we?

Are we still needed for discovery?

Do we have a role for access to digital open content?

Will print become invisible?

Future of on-site services in a changing environment

The new paradigm?

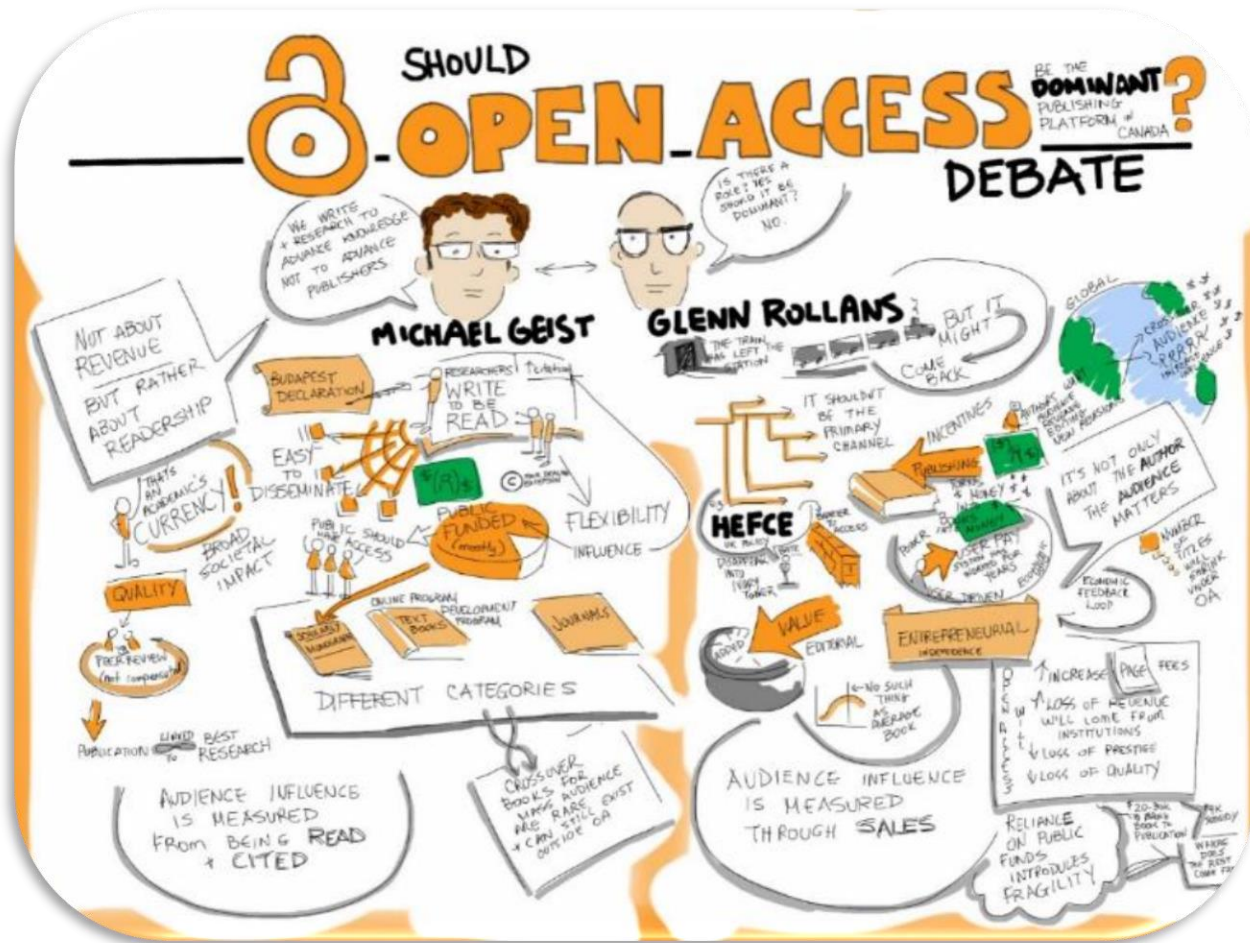
# New paradigm?

- An answer to the challenges could be to move from a collections to a (open science) services paradigm.
- Other industries are going down a similar route, by focusing on value-added services.
- For the open access transformation there appears to be such a model already: move from acquiring closed content to enabling users to share research openly.

Will this stand up in the future?  
A hypothetical 2030  
knowledge environment



# 2030: the debate – is over: OA has won



<https://www.flickr.com/photos/gforsythe/14270651836>

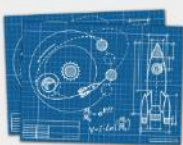
# ...what will be the role of libraries though?

## "Unpaywall is transforming Open Science" —Nature feature article, August 2018

Used and trusted by top organizations



We're integrated into thousands of library systems, search platforms, and other information products worldwide. In fact, if you're involved in scholarly communication, there's a good chance you've already used Unpaywall data.



**Open Source and nonprofit**

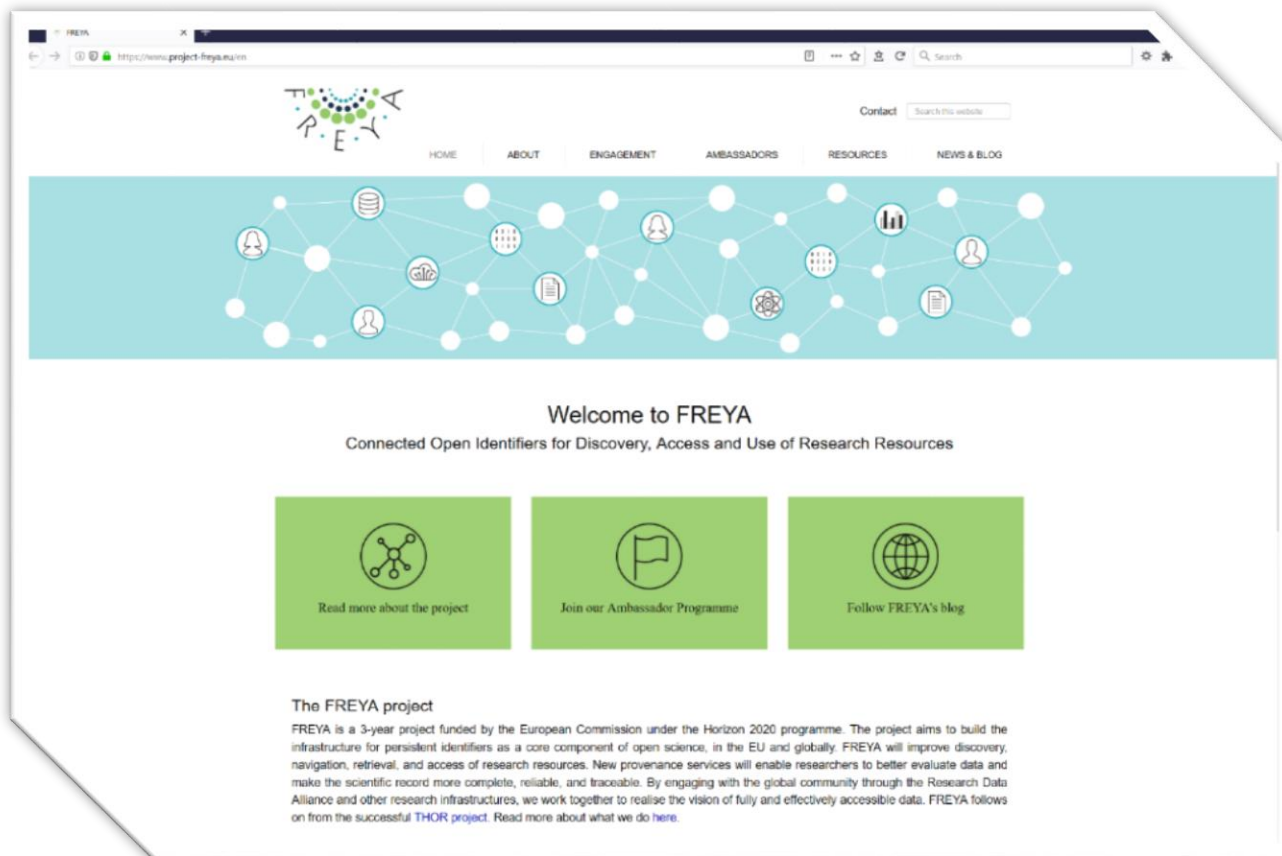
Unpaywall is run by **Impactstory**, a nonprofit dedicated to making scholarship more accessible to everyone. Open is our passion. So it's only natural our source code is open, too.

Easy access for everyone

We've helped with projects ranging from undergrad class assignments to global enterprise integrations. No matter what your use case, we've probably got an easy way for you to access our data...after all, access is what this is all about.




# Persistent identifiers: end of local data?




The screenshot shows the homepage of the FREYA project website. The browser address bar displays "http://www.project-freya.eu/en". The website features a navigation menu with links for HOME, ABOUT, ENGAGEMENT, AMBASSADORS, RESOURCES, and NEWS & BLOG. A search bar is located in the top right corner. Below the navigation menu is a teal banner with a network diagram of white nodes and lines, each containing a different icon representing various research and data concepts. The main content area is white and contains the following text and elements:

## Welcome to FREYA


Connected Open Identifiers for Discovery, Access and Use of Research Resources



Read more about the project



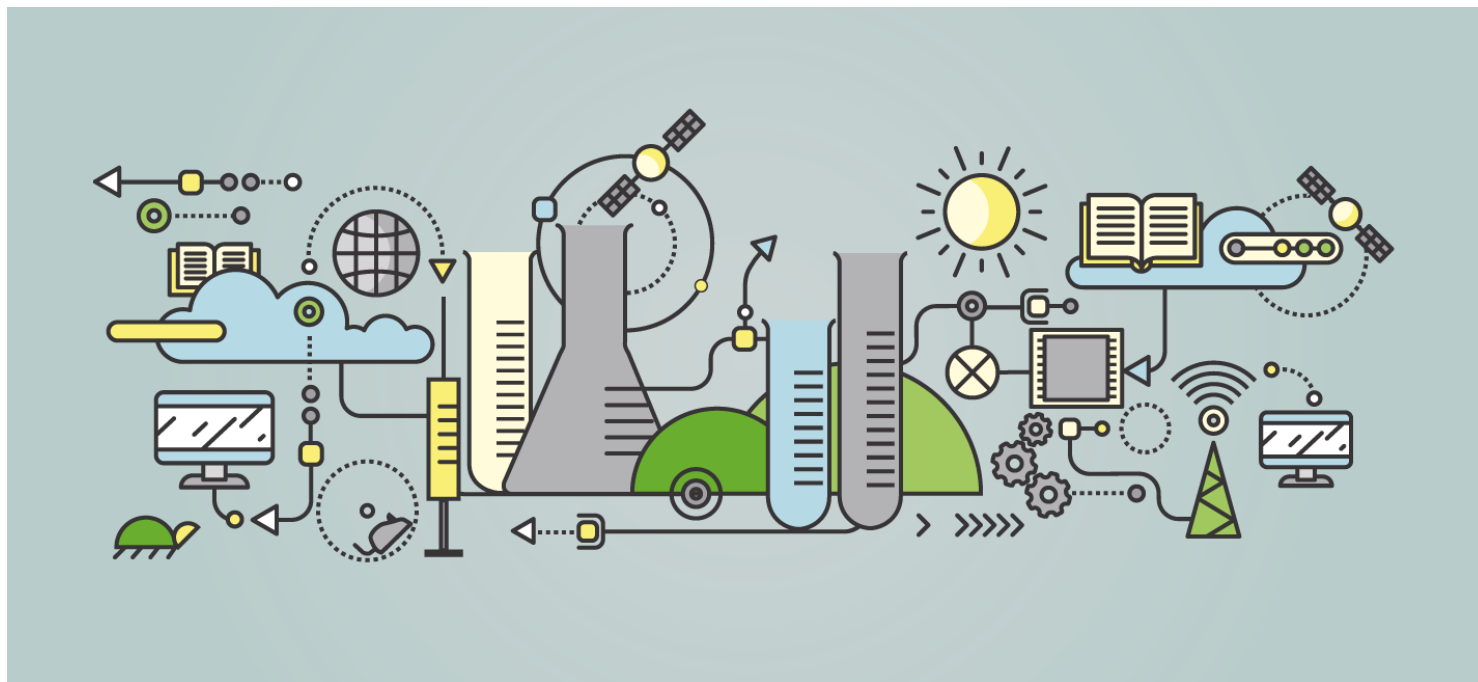
Join our Ambassador Programme



Follow FREYA's blog

**The FREYA project**  
FREYA is a 3-year project funded by the European Commission under the Horizon 2020 programme. The project aims to build the infrastructure for persistent identifiers as a core component of open science, in the EU and globally. FREYA will improve discovery, navigation, retrieval, and access of research resources. New provenance services will enable researchers to better evaluate data and make the scientific record more complete, reliable, and traceable. By engaging with the global community through the Research Data Alliance and other research infrastructures, we work together to realise the vision of fully and effectively accessible data. FREYA follows on from the successful THOR project. [Read more about what we do here.](#)

# Open science – can we really support it?



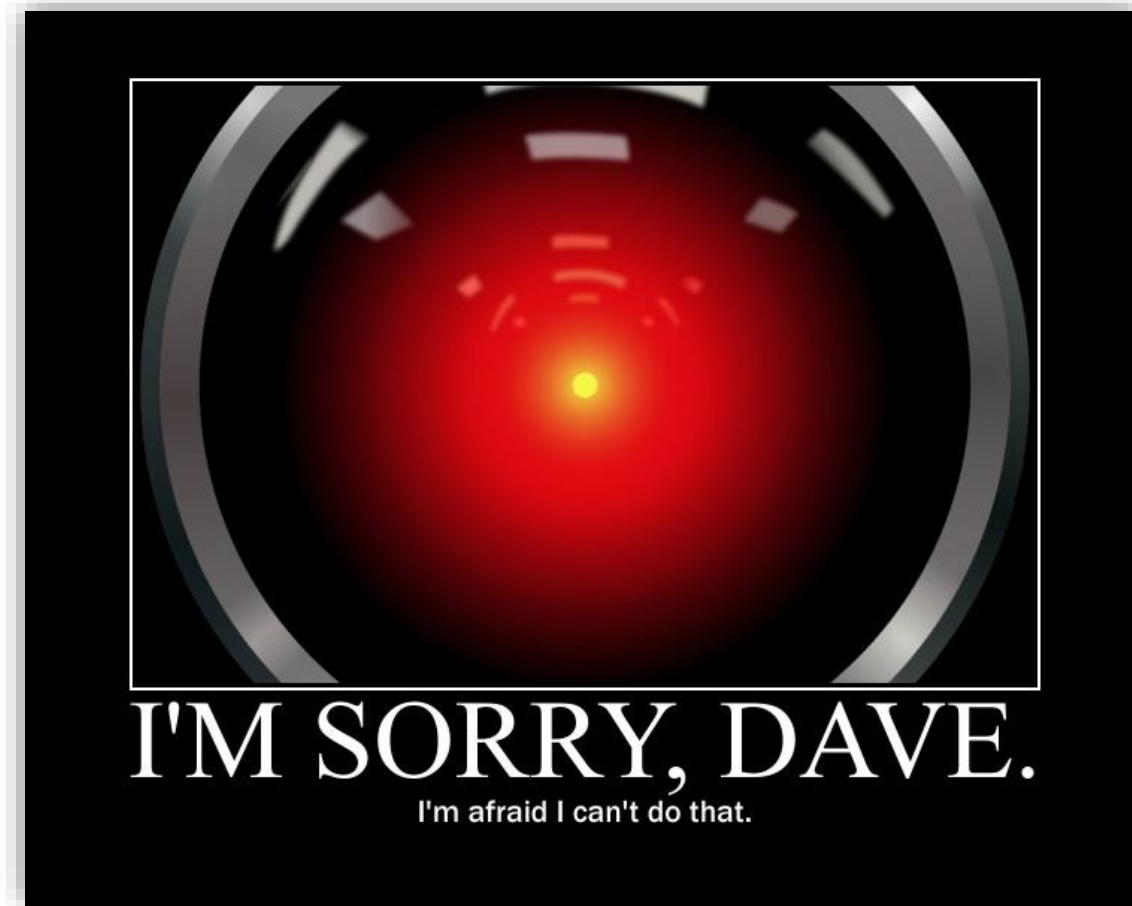
<https://about.hindawi.com/blog/a-radically-open-approach-to-developing-infrastructure-for-open-science/>

# Our #1 UI will be for software not people



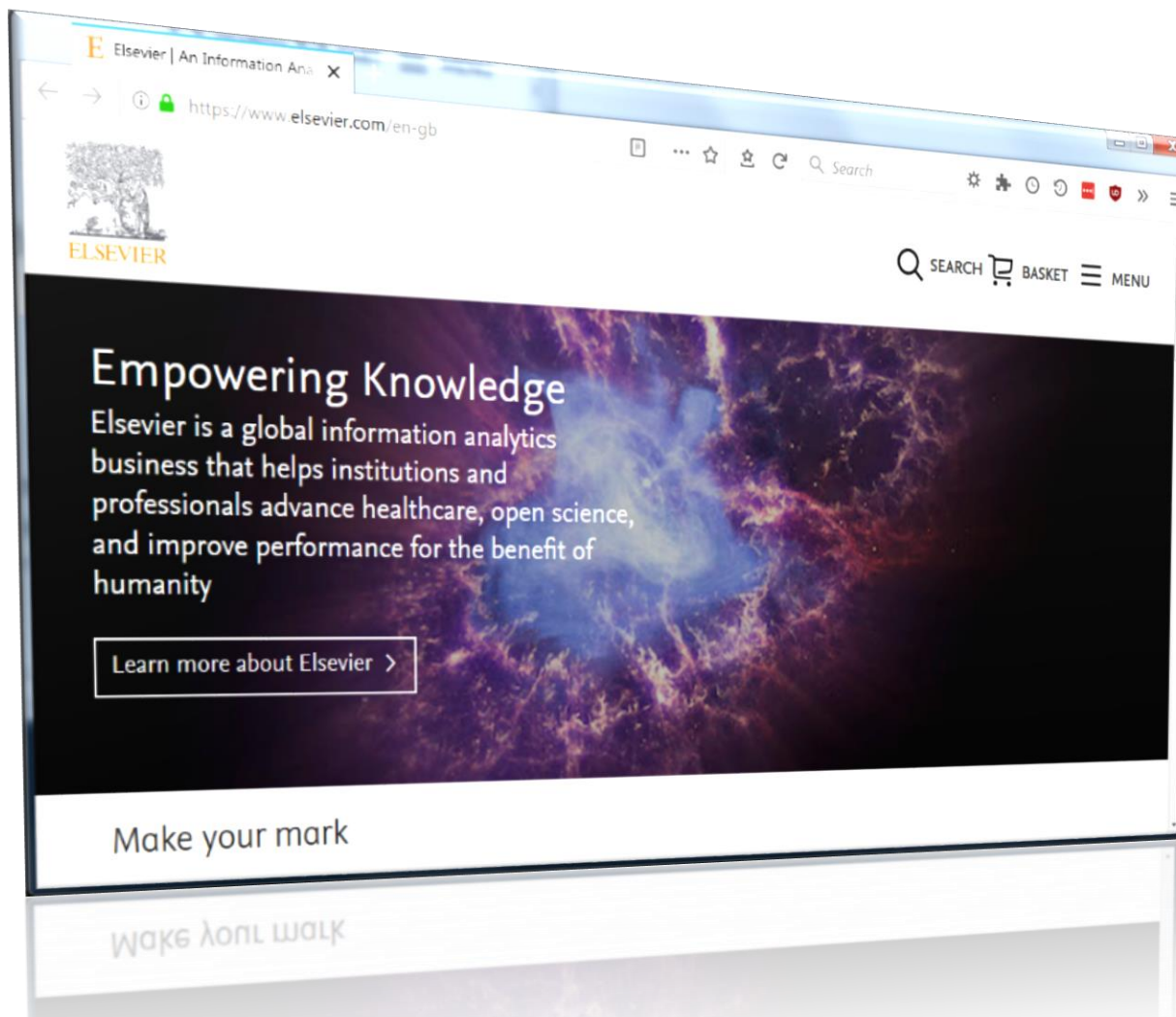
[https://en.wikipedia.org/wiki/File:Card\\_puncher\\_-\\_NARA\\_-\\_513295.jpg](https://en.wikipedia.org/wiki/File:Card_puncher_-_NARA_-_513295.jpg)

# Algorithms will manage our content



[https://commons.wikimedia.org/wiki/File:Motivator\\_HAL\\_9000\\_soory\\_dave.jpg](https://commons.wikimedia.org/wiki/File:Motivator_HAL_9000_soory_dave.jpg) CC BY 3.0

# Big publishers reborn as data companies



# How might the “new paradigm” work out?

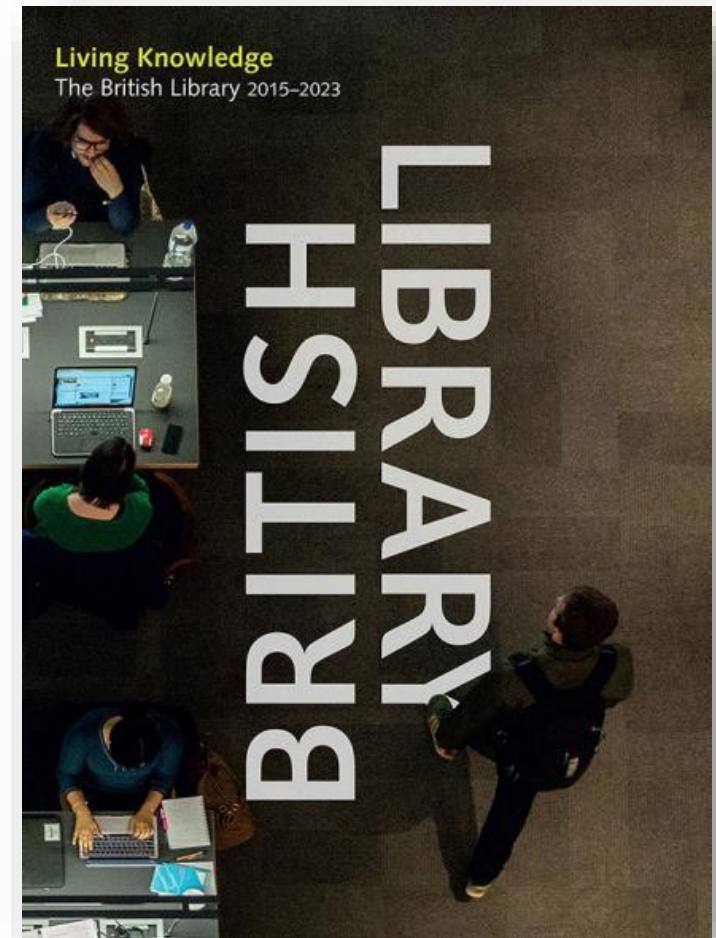
- Traditional role of discovery, access and managing content reduced
- We will procure, not run services and our information will live in the cloud
- Our digital services will be provided by a few service providers – unless we build critical mass and organise/own library service providers
- Our role in open science services may be smaller than we expect
- Our digital special collections may not be accessed through us, and analogue material that isn't visible online will see decline in use
- Staffing will be reduced, focusing on licensing/connecting solutions and enabling users; we will need data science skills to do that
- Perhaps many libraries will be less of digital information service providers and more of a human enabling device?



# Considering the British Library's response to the changing environment

# The British Library response

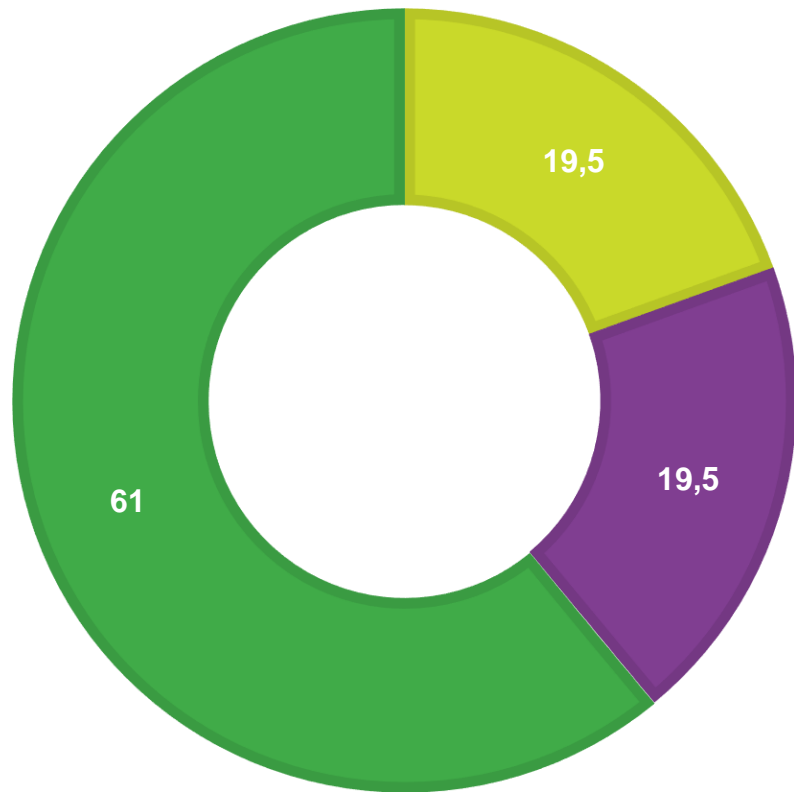
- Living Knowledge articulates the vision of the British Library in 2023 as the **most open, creative and innovative institution** of its kind in the world.
- A new **Service Strategy** for research and a new **Content Strategy**.  
<http://doi.org/10.1629/uksg.409>
- Everything Available is a **strategic change management portfolio** designed to deliver the transformation of the Library's services to researchers and research organisations.



# Understanding our users

- Creation of dedicated post: Research Services Insight Manager
- Programme of user research:
  - Non-user research
  - “Total” audience view (across our different audience types)
  - On-site research: reading rooms and public areas
  - Ongoing reading room user satisfaction snapshot surveys
  - Discovery user research studies
- For this talk I will focus on online services

# On-site users and the collection



■ Not using material ■ Not using material that day ■ Using material

Sample from on-site interviews / observations

- Even at the British Library, “readers” don’t always want to read collection items
- Some are looking for an IT-enabled workplace
- Computational research requires a different space design
- Desire for the library as an interdisciplinary space

# Survey of non-users about services



Online Catalogues

37% Happy with other sources

**33% Never considered it**

**27% Didn't know it existed**



Reading Rooms

45% Too far away

**32% Never considered it**

30% Happy with other sources



Interlibrary loan

**35% Didn't know it existed**

31% Never considered it



Business & IP Centre

**37% Didn't know it existed**

33% Never considered it

30% Too far away

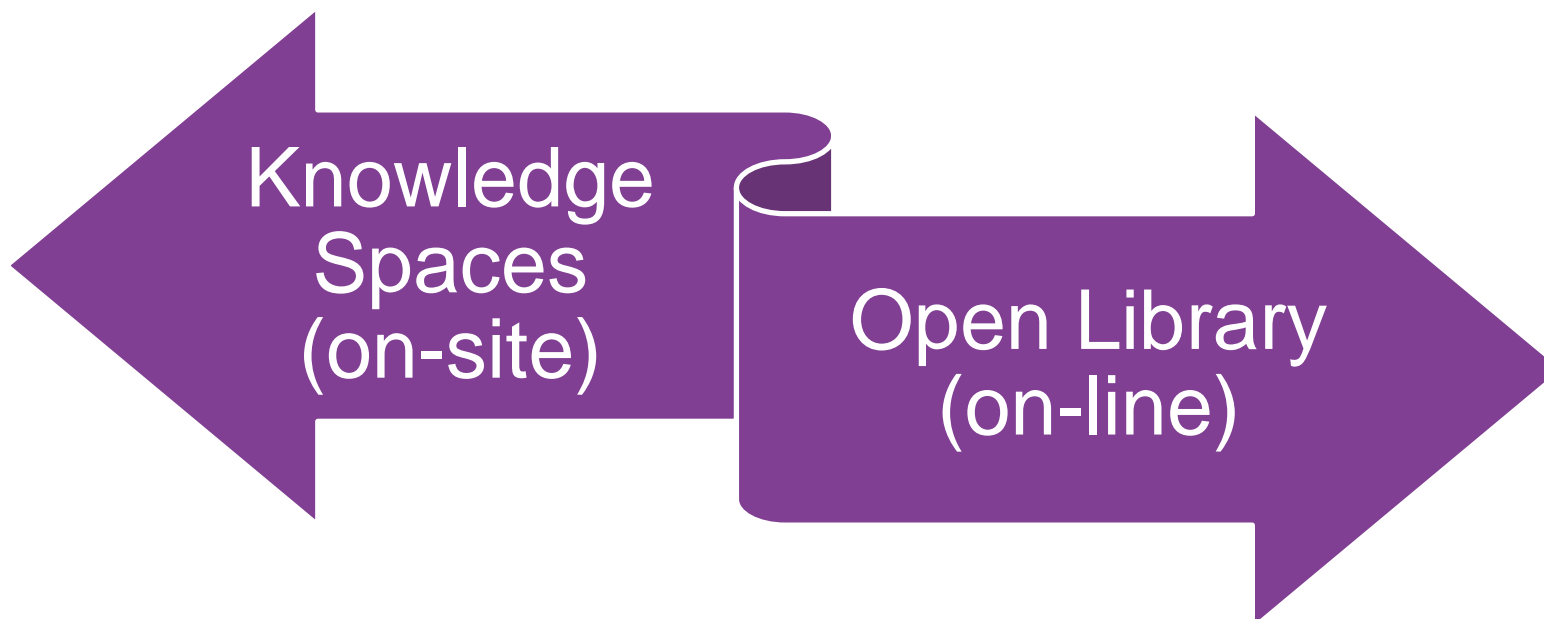
- Online is first port of all for the majority, Google most common starting point
- Once beyond Google, there was an inherent trust in information from specialist websites
- Some are believing their area of interest unlikely to generate 'untrustworthy' online information
- Offline search, i.e. going to libraries, begins when online sources fail to meet research need

# Lessons from user research & engagement

- Low awareness beyond existing users (this will be less relevant for university libraries).
- Low awareness could be addressed through easy to understand / use online services (need for information at speed).
- Biggest single barrier = need to physically visit the Library to get the reader pass to access reader-only information.
- Digital collections hold greatest scope for attracting new users.
- High trust in British Library/libraries as trustworthy source of information, but perhaps not currently enough concern about other sources to be able to capitalise on this.
- New space and service design for on-site service, moving at least partially away from traditional reading room model.

# Transforming the Library

# Everything Available programmes





# Knowledge Spaces

Living Knowledge: *“Ensure that the Library’s on-site facilities and Reading Room services keep pace with the changing needs of researchers”*

Programme aims:

- **Flexible spaces** that will reflect the needs of researchers, fulfil multiple purposes, and will be adapted over time, supporting new services
- **Technology enabled design** with bring-your-own-device access to digital content, audio-visual facilities and infrastructure for (interdisciplinary) data-driven research
- **A more open, inclusive and welcoming environment**, attracting casual visitors, researchers, experts and commercial clients
- **Incubation spaces** for workshops, seminars and science-related events that are bookable by researchers and business users

# British Library Labs

LIBRARY  
HSILIRB

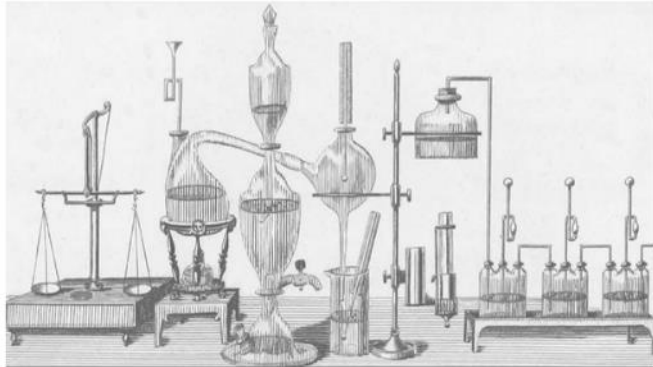
Search our website

Our website ● Main Catalogue


Catalogues & Collections ▾ Discover & Learn ▾ What's On ▾ Visit ▾ Business Support ▾ Shop ▾ Join ▾

## Projects


### British Library Labs



**Project contacts**



**Mahendra Mahey**  
Project Manager,  
British Library Labs



**Filipe Bento**  
Technical Lead,  
British Library Labs

**British Library Labs supports and inspires the use of the British Library's digital collections and data in exciting and innovative ways, through competitions, events and collaborative projects.**

Published date: 7 November 2019

#### About

Formed in 2013, British Library Labs (BL Labs) promotes, inspires, and supports the use of the Library's [digital collections and data](#). The team works on [projects](#) with researchers, developers, educators, entrepreneurs and artists from around the world. You can read more about some of these projects on the Digital Scholarship [case studies](#) pages and [blog](#).

BL Labs provides insight into the emerging practice of digital research and helps shape the provision of the Library's digital services, tools, collections, and data. It ensures that the intellectual digital heritage we hold is accessible to everyone for research, inspiration and enjoyment.

# Skills for the digital future (and present)

Home | The Alan Turing Institute

https://www.turing.ac.uk

## The Alan Turing Institute

Search Menu

**Women in data science and AI - Hub** →  
A hub to connect women in data science and AI with resources, news and research, and gather feedback about the needs of the community

**Welcoming world-class Turing AI Fellows to the Institute** →  
The Turing will be hosting an event to welcome the new Turing AI Fellows...  
Thursday 24 Oct 2019

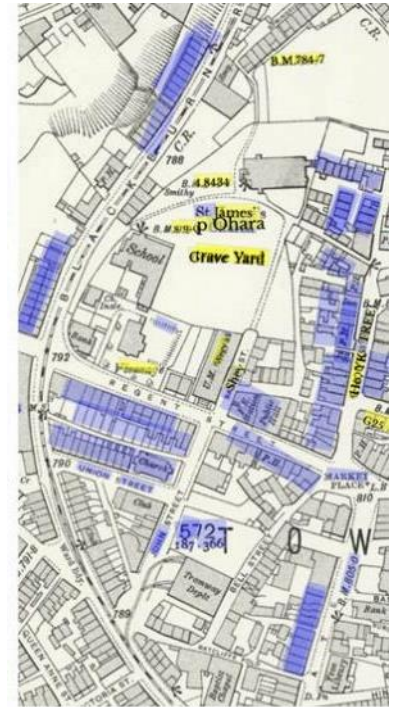
We're making great leaps in data science and artificial intelligence research. Read our #TuringImpact case studies.

Learn more ↓

Read our #TuringImpact stories

# Living with Machines collaboration

- £9.2m by Arts and Humanities Research Council and UK Research and Innovation
- Partners: Allan Turing Institute, BL, universities
- Living with Machines is a research project that rethinks the impact of technology on the lives of ordinary people during the Industrial Revolution.
- Sources include digitised newspapers; Ordnance Survey maps; census, birth, death and marriage records; digitised books.
- It aims to be transformative not just for the research question itself but for digital research methods.



Identifying places in historic maps

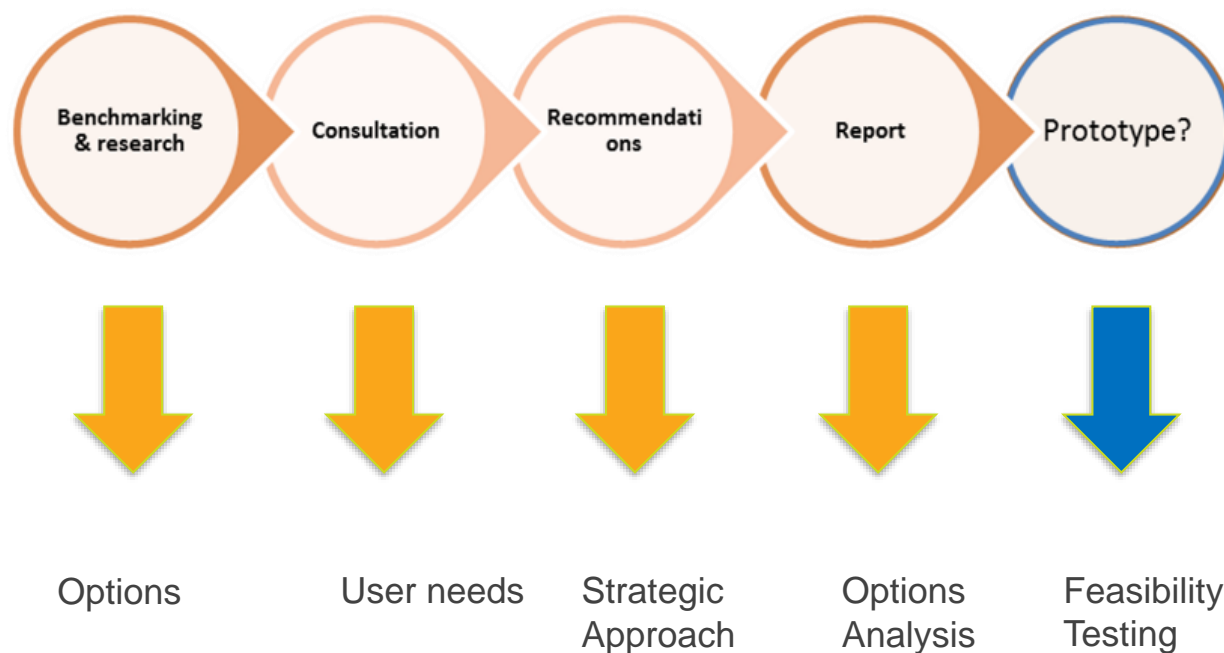
# Transform by partnering with innovators

The screenshot shows a web browser window with the URL <https://www.gettheresearch.org/search?q=autism&oa=true>. The page features the 'GET THE RESEARCH' logo, a search bar containing 'autism', and filter options for 'Open Access only' and 'Highlight terms'. A 'SUBSCRIBE TO FEED' button is also visible. The search results are displayed under the heading 'Autism' and include two entries:

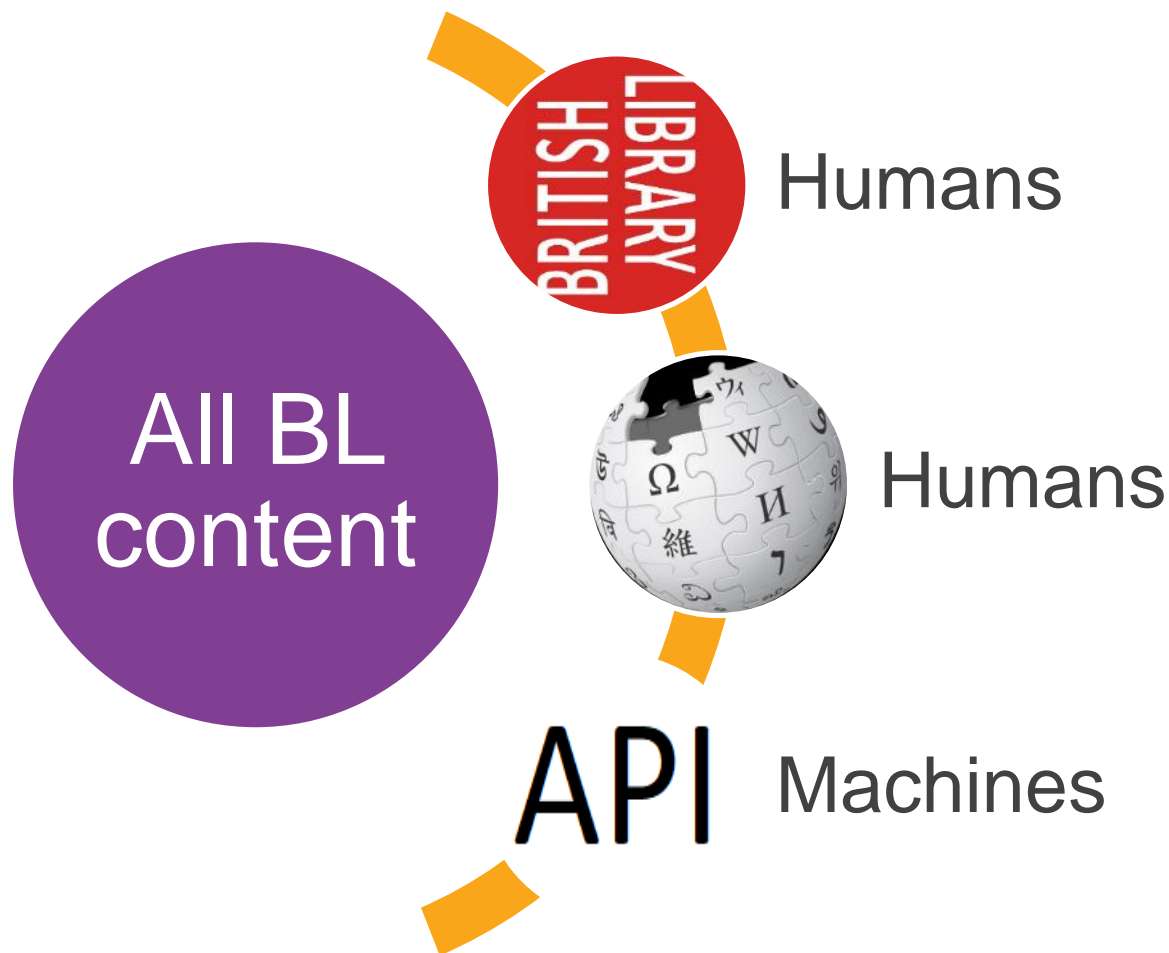
- Measles, Mumps, Rubella Vaccination and Autism Cohort Study**  
2019 *Annals of Internal Medicine*  
[Learn more](#)
- Aluminium in brain tissue in autism**  
2017 *Journal of Trace Elements in Medicine and Biology*  
[Learn more](#)

Accompanying images include a photograph of a child receiving a vaccine (captioned 'Measles vaccine') and a diagram of a human brain (captioned 'Human brain'). A sidebar on the right provides a detailed definition of Autism: 'Autism is a neurodevelopmental disorder characterized by impaired social interaction, verbal and non-verbal communication, and restricted and repetitive behavior. Parents usually notice signs in the first two years of their child's life. These signs often develop gradually, though some children with autism reach their developmental milestones at a normal pace and then regress. The diagnostic criteria require that symptoms become apparent in early childhood, typically before age three.' Below this text is a photograph of a young child in a red sweater standing in a kitchen, reaching for a can in a pantry (captioned 'via Wikipedia').

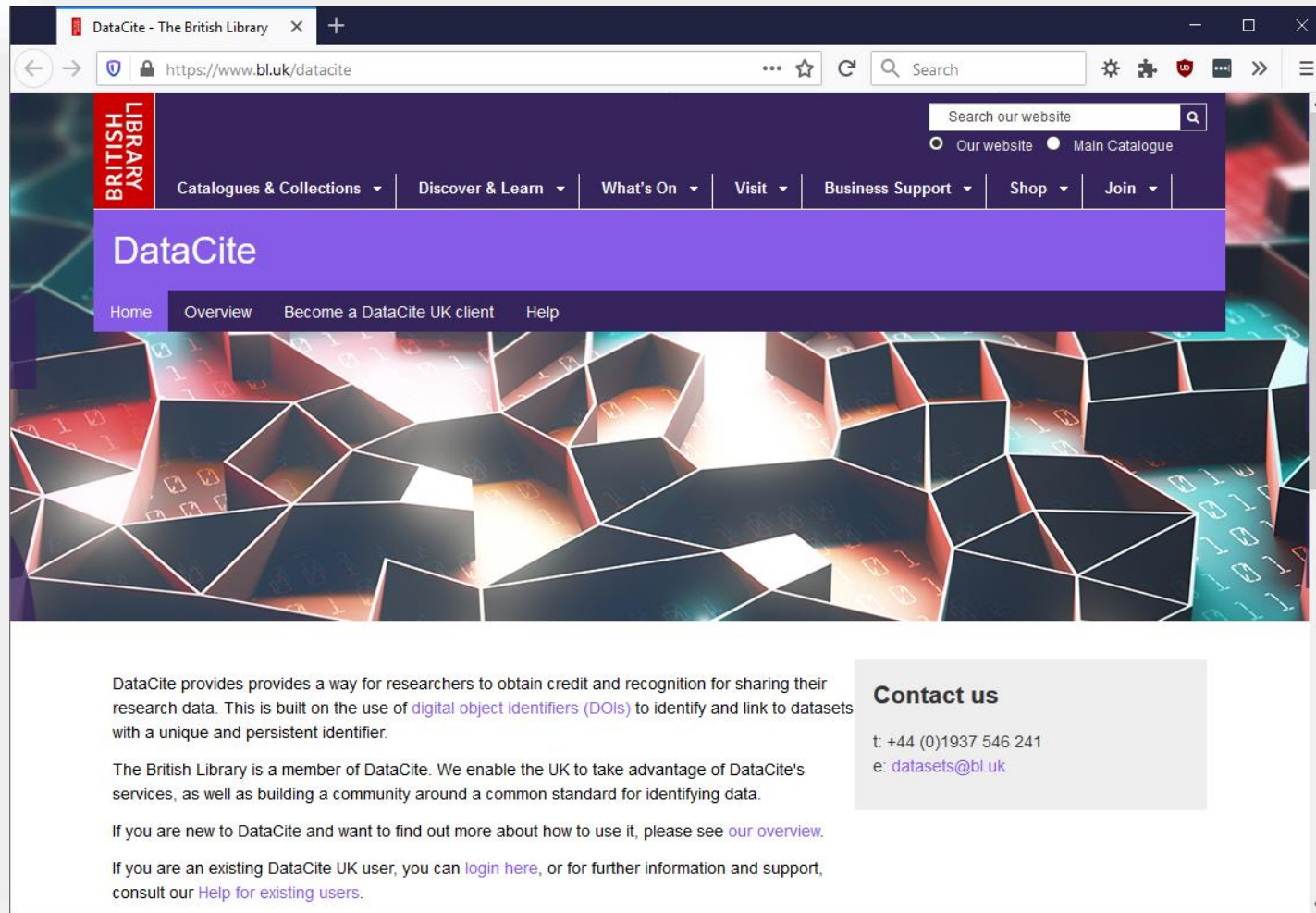
# Single Digital Presence for public libraries?



# Single point of entry to collections



# PID services



DataCite - The British Library

https://www.bl.uk/datacite

Search our website

Our website Main Catalogue

Catalogues & Collections Discover & Learn What's On Visit Business Support Shop Join

## DataCite

Home Overview Become a DataCite UK client Help

DataCite provides a way for researchers to obtain credit and recognition for sharing their research data. This is built on the use of [digital object identifiers \(DOIs\)](#) to identify and link to datasets with a unique and persistent identifier.

The British Library is a member of DataCite. We enable the UK to take advantage of DataCite's services, as well as building a community around a common standard for identifying data.

If you are new to DataCite and want to find out more about how to use it, please see [our overview](#).

If you are an existing DataCite UK user, you can [login here](#), or for further information and support, consult our [Help for existing users](#).

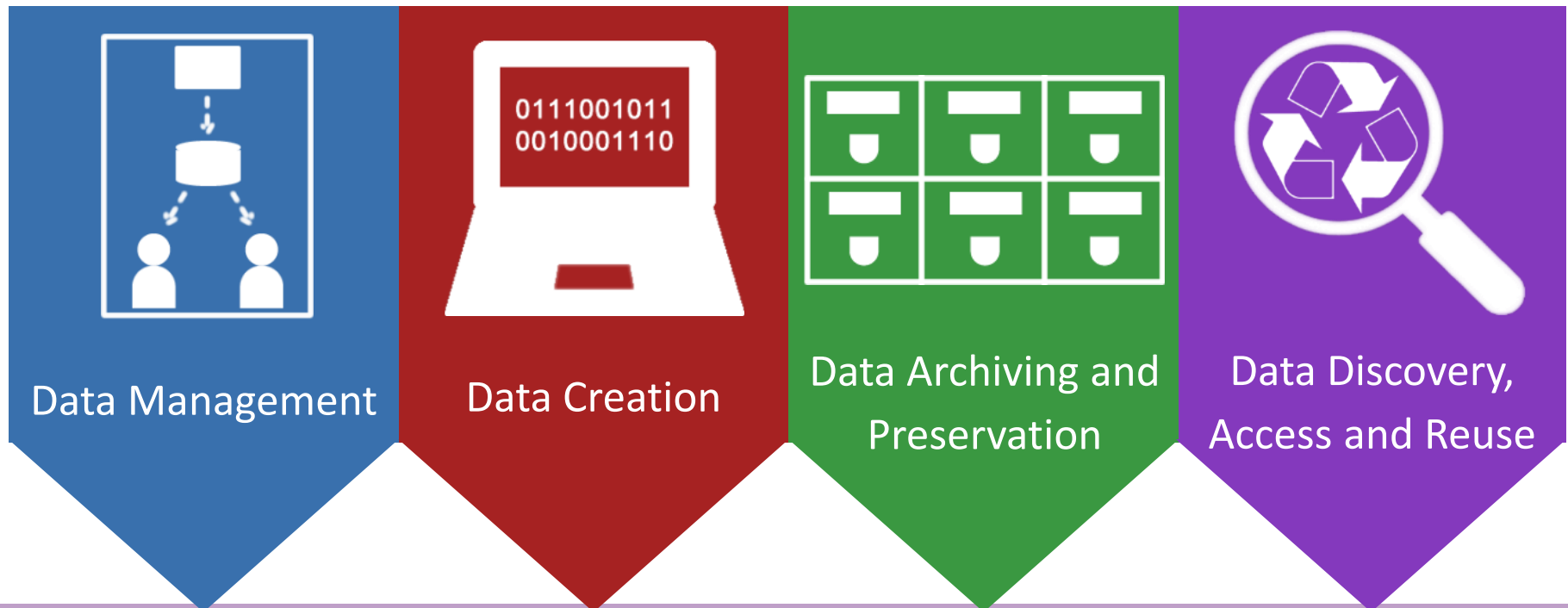
### Contact us

t: +44 (0)1937 546 241  
e: [datasets@bl.uk](mailto:datasets@bl.uk)



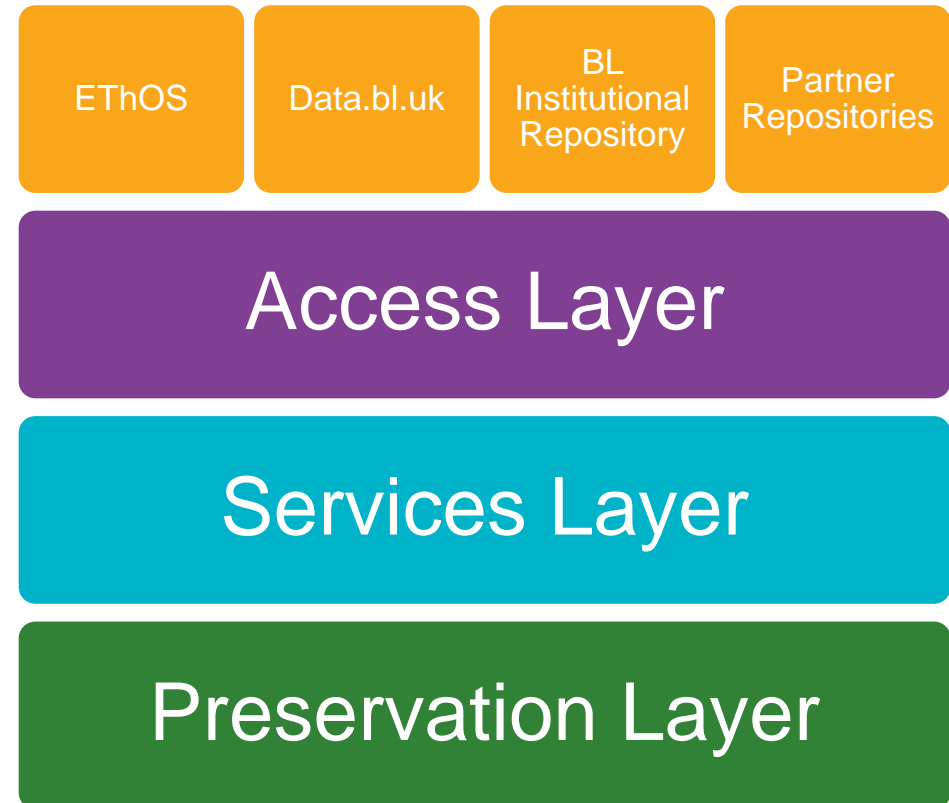
# British Library data strategy

‘Our vision for the British Library is that research data are as integrated into our collections, research and services as text is today.’



# Developing an open repository platform

- Consolidate repositories on a single platform
- Refresh preservation system for national collection (>5m items, petabyte-scale)
- Access layer with multiple repositories, shared service model
- Shared repository developed with partners



# Shared Research Repository pilot

Shared Research Repository

https://iro.bl.uk

## Shared Research Repository <sup>BETA</sup>

for cultural and heritage organisations

Welcome to our pilot research repository where you'll find research produced by staff of the British Library and our current partner organisations: the British Museum, MOLA (Museum of London Archaeology), National Museums Scotland, Royal Botanic Gardens Kew, and Tate.

Begin your search

Browse our repositories:

MOLA TATE National Museums Scotland The British Museum Kew LIBRARY HSILIRB

About

Managed by the British Library  
Powered by Ubiquity Repositories

# Towards a National Collection

The screenshot shows the UK Research and Innovation website. At the top left is the UKRI logo and the text 'UK Research and Innovation'. To the right are social media icons for Twitter, LinkedIn, and YouTube, along with a search bar and a 'Submit' button. Below this is a navigation menu with links for Funding, Research, Innovation, Skills, News (highlighted in yellow), Public engagement, and About us. The main content area has a breadcrumb trail: Home > News > First steps towards an integrated virtual national arts collection. The headline is 'First steps towards an integrated virtual national arts collection' with a date of 28/10/2019. The text describes a £19 million Government research programme under the Strategic Priorities Fund, aimed at transforming cultural heritage institutions through digital technologies like visual search and AI. It includes quotes from Arts Minister Helen Whately and Professor Edward Harcourt, Director of Research, Strategy & Innovation at AHRC.

UKRI UK Research and Innovation

Accessibility | Cymraeg | Contact

Twitter LinkedIn YouTube

search Submit

Funding Research Innovation Skills News Public engagement About us

Home > News > First steps towards an integrated virtual national arts collection

## First steps towards an integrated virtual national arts collection

28/10/2019

Britain's world-leading cultural institutions could soon undergo a digital revolution thanks to a new £19 million Government research programme.

The [Strategic Priorities Fund](#) – Towards a National Collection: Opening UK Heritage to the World has the potential to transform the way our cultural heritage institutions can work together.

This research funding, delivered by the Arts and Humanities Council (AHRC) for UK Research and Innovation, will enable new ways of searching, accessing and displaying cultural treasures. For example, technologies such as visual search or artificial intelligence could revolutionise ways of exploring our collections, breaking away from text-based search for the first time in history.

**Arts Minister Helen Whately said:**

"Our museums and galleries teach us about our past and help us to better understand the world around us. This funding will see cutting-edge tech enhance the visitor experience, providing exciting new ways for people to explore our history."

New innovative digital technologies will also enable the possibility of linking collections so that in the future, researchers can pull together digitally items from across the UK's amazing collections, enabling a truly national collection for the first time.

**Professor Edward Harcourt, Director of Research, Strategy & Innovation at AHRC, said:**

"Digital innovation will be harnessed to link objects from the UK's internationally renowned museums, galleries, libraries and archives, enabling researchers to search digitally across these amazingly diverse collections for the first time, and to bring the fruits of their research to the public in exciting new ways."

"The investment announced today will take the first steps towards an integrated virtual national collection, reinforcing the UK's leading position not only in the arts and humanities but across all areas of research."

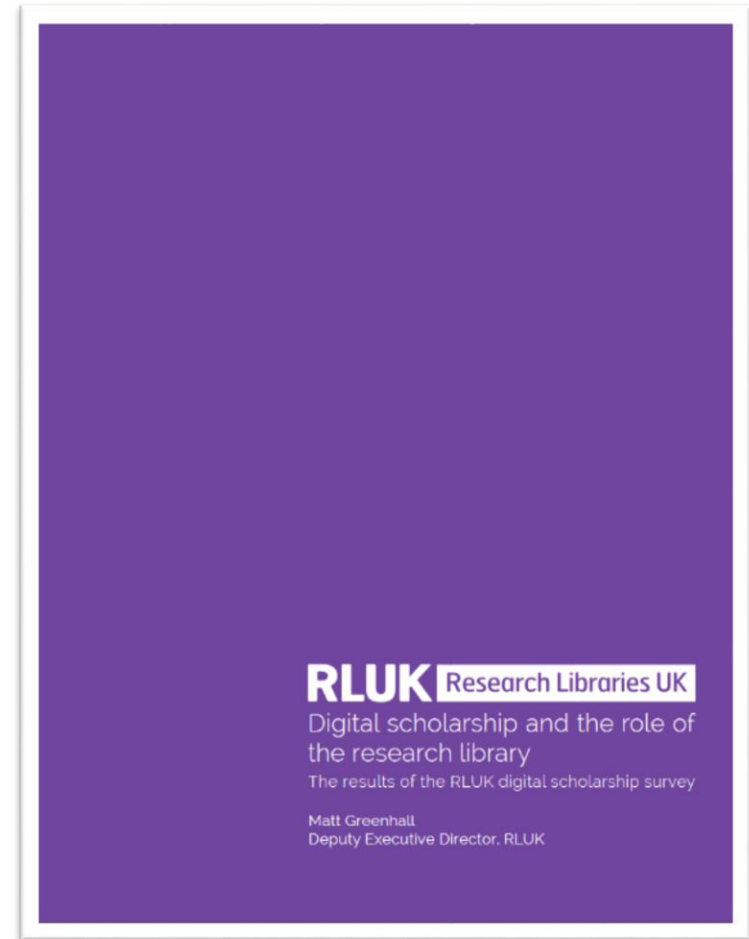
# Persistent access in an open science world



<https://www.flickr.com/photos/schilder/70145859/> CC BY 2.0

# Skills and the digital shift

- Developing a new People Strategy at the British Library
- Work with community initiatives – lead in RLUK's Digital Shift working group
- Transformation Through International Collaboration project with Dutch and Belgian national libraries



<https://www.rluk.ac.uk/digital-scholarship-and-the-role-of-the-research-library-an-rluk-report/>

# Conclusion

# Conclusion

- Move from collection focus to one of enabling users
- Add value by connecting the right things, not necessarily by developing ourselves
- Rally around community infrastructures
- “Open” procurement principles
- Need to meet expectations for user experience
- Open science needs open information management
- Not leave AI to closed commercial approaches
- Fewer but more highly skilled staff – how to manage transition
- Our strength is not just in collections, but in trust, transparency and people
- Rethink on-site services from consumption to knowledge creation