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resource sharing in a disruptive ecosystem

UKRR – a collaborative collection management strategy

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Abstract:

The British Library is one of the greatest research libraries in the world. It holds in excess of 150 million items, from original print newspapers to manuscripts, books, journals sound recordings and unique personal archives. The collection is both historic and contemporary bringing together the nation's memory for the purpose of cultural appreciation and research.

In terms of meeting its defined purposes[1], the British Library (BL) must transform to meet the current and future needs of research demands because the way in which society seeks knowledge has changed. The traditional library is one of card catalogues and reference numbers that navigate the researcher in an analogue world to the knowledge they seek. Nowadays researchers expect the data and content in their hands anywhere, in dynamic and social spaces, rejecting the past norms of formal research establishments. As the BL adjusts to accommodate this need it must still maintain access to its print collections and of course preserve them for future generations.

The UK Research Reserve (UKRR) project set the ambitious target of saving 100km of shelf space within University Libraries by de-duplicating low use print journals on the premise that a master, accessible copy is held by the BL. This collaboration between the BL, UK Higher Education and (formerly) the Higher Education Funding Council for England (HEFCE) has subsequently delivered 128km of library shelf space amounting to £29m in capital savings, and over £18m in recurring estate management costs.

This paper describes the evolution of the new access and preservation approach building on the UKRR project outcomes. It will explain how print preservation and access can fit harmoniously alongside a digital strategy reflecting the need for a wider access model that democratises access to

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[1] www.bl.uk/aboutus/foi/pubsch/pubscheme3/living-knowledge-2015-2023.pdf

content whilst ensuring preservation for future generations. It will also contextualise the approach as part of the national Library's mandate and why the combination has proven to be a recipe of success.

Keywords: Preservation, Access, Journals, Space, De-duplication.

UKRR – a collaborative collection management strategy

1. The British Library – a brief history

1.1. The British Library is one of the greatest research libraries in the world. It holds in excess of 150 million items ranging from Journals, to Newspapers, to Sound Recordings and personal archives. The collections cater to the needs of audiences interested in the rarest manuscripts to the latest electronic journals. The role of the British Library was defined in an *Act of Parliament* in 1972 combining a number of libraries across the country including the National Lending Library (NLL) originally set up by Donald Urquhart in the 1960s. He faced a challenge back then – to provide an efficient *national* solution for remote access to research materials across the country (see Figs. 1 and 2). The 42 acres ex Ministry of Defence site between York and Leeds was a perfect location given its location in the centre of the country and its adjacency to the main transport links, thereby supporting an effective distribution system (inter-lending service).
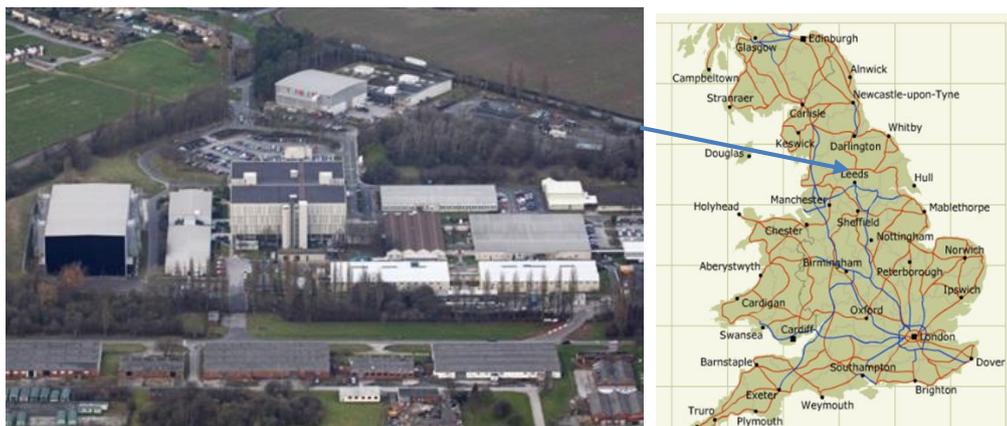
Fig 1 – The British Library, Boston Spa site (today)
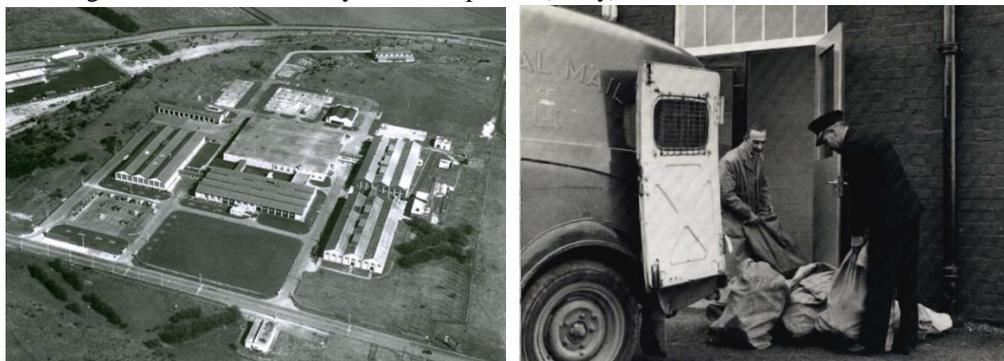
Fig 2 – The British Library, Boston Spa (1960s)

1.2. The inter-lending library (ILL) service over time incorporated licensed copying in the form of photocopied journal articles and book chapters on an industrial scale. Demand rapidly increased to a peak of 4m requests in the late 1990s, not just within the UK but

internationally too. The audiences too changed in profile; the service was originally aimed at Higher Education and Government based research organizations, but then a commercial opportunity was identified. The service was re-engineered in order to support commercial research, in particular pharmaceutical companies thereby underpinning a rapid increase in scale supporting c800 staff.

1.3. The transition from the National Lending Library to The British Library involved the building of a new site at St Pancras in central London in 1998, primarily for physical (reading room) access together with exhibition and gallery spaces – see Fig 3.

Fig 3 – The British Library, St Pancras London.

2. **The Document Supply Service**

2.1. The National Library has a role of preserving all UK published content via Legal Deposit. This content must be consulted on BL premises in the Reading Rooms, but may not be used for any other service.

2.2. The BL has an acquisition strategy based on the purchase of heritage collection items and contemporary collections in all subject disciplines (from Arts & Humanities to Science). Purchased material can be used for the Document Supply Service where a license agreement is in place with the relevant publisher and/or with a reciprocal rights clearing organization.

2.3. Since its conception in the early 1960s the service saw an increase in demand year on year up to the late 1990s, but the advent of digital, internet, Google, "publisher-pay-per-view" models etc. saw the demand curve subsequently go into decline – see Fig. 4.
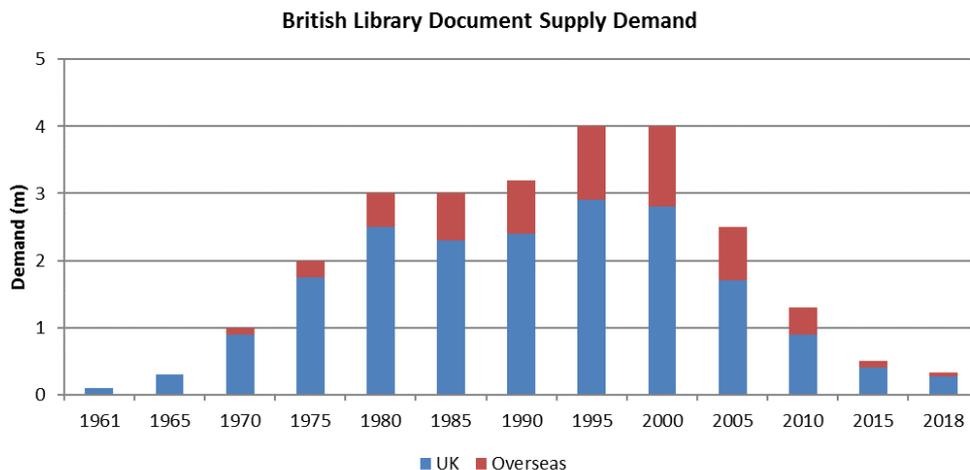

Fig 4 – The BL Document Supply demand curve.

2.4. Moreover, the provision of a document supply service is still a vital part of the BL operation, but providing access to contemporary research collections is difficult as the Library faces an ever reducing budget position. 80% of the Library's income is provided from Government grant-in-aid funding which has reduced steadily over time. The inevitable impact has seen budget reductions in all areas, including acquisitions. Therefore, in order to avoid just being the "back stop" provider of older, rarer and more niche publications (which nevertheless is still an important aspect of the service) a 3rd party approach was adopted in partnership with the publishers and collecting societies. This involves sourcing an item direct from the publisher web site and "reselling" to the customer in a way that gives the user the convenience of a "one-stop-shop" to all types of materials via a range of service options – see Fig. 5. The copyright fee is still collected from the customer and passed back to the publisher who therefore gains from having this additional (BL) shop window.
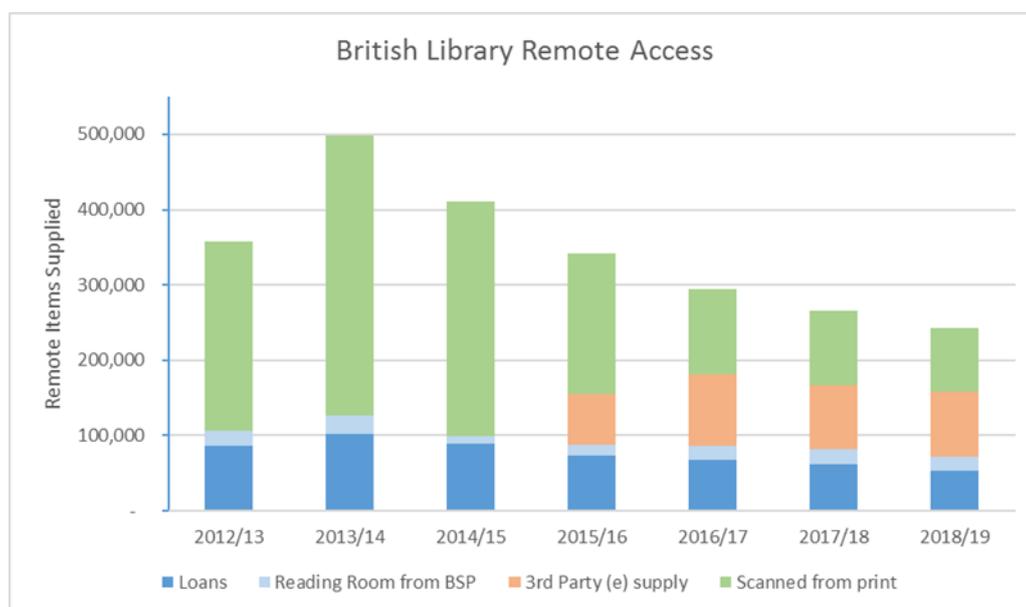
Fig 5 – The BL Document Supply curve illustrating the impact of 3rd party content sourcing.

2.5. The graph highlights some interesting points;
- The decline of "scan from print".
- Inter-lending loan supply demand fairly static.
- Supply to London reading rooms will increase given two thirds of the collections are stored at Boston Spa and increasing.
- The introduction of 3rd party supply has instigated a leveling out of the overall demand curve.

2.6. A number of strategic interventions have looked at reestablishing the core purpose and role with which the northern (Boston Spa) campus is utilized. Clearly there is still a requirement to provide remote access to BL collections and indeed, the BL Act states the BL must always provide such a service, but further diversification was needed.

Naturally any diversification should build on the core strategy (Living Knowledge[2]) and the "Unique Selling Points" (USPs) offered from the BLs northern operation[3]. Accordingly the following new service derivatives and/or operational changes have taken place over recent years;

- Managing and operating the two new high density, low oxygen, automated storage buildings – see Fig 6.

Fig 6 – BL high density, low oxygen, automated storage buildings at Boston Spa.

- Higher Education Scanning Service[4] (eHESS) in partnership with the Copyright Licensing Agency (CLA)[5] – digitization of book chapters for HE course packs.
- Digitization and central access to UK PhD theses content (ethos service[6]).
- Renting spare storage capacity to 3rd party organizations.
- The UK Research Reserve (UKRR) – see below.

3. The UK Research Reserve (UKRR)[7]

3.1. Higher Education libraries have been at the forefront of enabling the huge change that has happened in universities and have been very successful in helping their institutions to adjust to the new circumstances – from providing new and different learning and research spaces in their buildings, adding value to students, adapting to the exponentially growing range of digital content and the new ways in which it is accessed.

3.2. In 2007 it became apparent that library storage space was becoming an urgent priority and the idea around de-duplicating low use print journals based on a collaborative approach in

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[2] https://www.bl.uk/.../living-knowledge-the-british-library-2015-2023.pdf

[3] As well as having the collection management and document supply focus, many of the British Library's core functions are based in the Boston Spa site including supporting the digital centre of the UK's library system, housing the British Library's Technology team alongside one of the four data nodes that store and preserve the UK's rapidly-growing digital Legal Deposit collection.

[4] https://www.bl.uk/help/faqs-for-the-enhanced-higher-education-supply-service

[5] www.cla.co.uk

[6] The ethos service offers a digitisation service of print based PhD theses and subsequently stores them in a central repository making them freely accessible. Born digital theses are now also stored alongside digitised theses in the same repository. Many universities also keep a copy within their institutional repository which can be accessed from the ethos service pages - https://ethos.bl.uk

[7] https://www.bl.uk/ukrr

conjunction with the National Library would be a good idea. Accordingly the UK Research Reserve (UKRR) pilot was launched as a collaborative partnership between the Higher Education sector, the Higher Education Funding Council for England (HEFCE) and the British Library that looked at the deduplication of print journals based on the premise that it would address:

- Preservation via a shared national collection to secure the long term storage, retention and availability of low use printed journals - UKRR aimed at that time to identify the last two copies of a print journal within the community and retain them as part of the UK's infrastructure and
- Access by utilizing the BL Document Supply Service copy delivered within a 24 hour service level agreement.

3.3. The pilot included six institutions - the University of Birmingham, Cardiff University, Imperial College, the University of Liverpool, the University of Southampton, and the University of St Andrews. In conjunction with the pilot, the BL commissioned a piece of research by CHEMS consulting that suggested – "… using a number of assumptions the report concludes that recurrent savings from Phase One (if the space were released and reused in another activity) could be £484k per annum".

- The actual financial outcome of the pilot (Phase 1) project based on the £708k HEFEC Funding amounted to - savings of £308k pa (ongoing operational budget saving) and £3.8m (capital saving)[8].

3.4. This provided the confidence to move into the main project which subsequently ran from Feb 2009 to Jan 2017 with 29 university members; this was then extended due to its popularity to March 2019 with a further 6 members. As the project progressed, initial concerns were ameliorated as a sense of trust and confidence developed particularly within the academic community coupled with the robust approach in ensuring two preservation copies were always guaranteed by virtue of checking / recording on Suncat[9] (the Jisc[10] managed national journal catalogue and holdings database).

3.5. The lead institution Imperial College London (ICL) worked hand in hand with the BL to manage the project and develop a process which evolved over the project duration but basically comprised;
    a. Having consulted with internal stakeholders about which journals would be suitable for de-duplication, the Member Library completed a template spreadsheet with the details and holdings of the journals they wished to offer to UKRR. These details are submitted to UKRR by uploading the completed file into UKRR's web application Linked Automated Register of Collaborative Holdings (LARCH).

    b. The information from the submitted file would be downloaded from LARCH by the BL and checked against BL loanable holdings. The SUNCAT team ran a check of all Member Libraries' holdings for the given list of titles and ISSNs from the submission.

This data was then forwarded to the BL where a manual comparison was made between the holding range being offered and the holdings found at other Member Libraries.

c. Material missing from the BL's existing lending collection would be requested in order to complete BL holdings, whilst titles not already in the BL collection would be assessed for suitability and could be requested by them in their entirety. The check on the Scarcity of an Offered Holding across the collections of other UKRR members informed the decision to retain or dispose the holding at the Offering Library.

d. Based on the results of the BL shelf check, the Scarcity check and the history of previous submissions of the same BL Overlap Title to UKRR, a Retention Status was decided for each Offered Holding. Offered Holdings given a Retain decision would be retained by the Offering Library. For each BL Retain Offered Holding the Offering Library could choose to retain the whole Offered Holding or transfer the requested part of it to the BL and retain the remaining part. Offered Holdings given a Dispose decision could be sent for environmentally friendly disposal or donated to charity. For each BL Dispose Offered Holding the Offering Library must transfer the part of it requested by the BL then could treat the remaining part as they would a Dispose decision.

e. Access to material held in the Research Reserve is provided via the BL's established document supply service (on-demand[11]), with UKRR members receiving a premium 24 hour service for all their document requests.

3.6. The project planned to end in March 2019 at which point the sector became quite vocal in the view that there was still significant amounts of low use journal content to de-duplicate and therefore it should continue. The BL therefore decided it would continue to support UKRR as part of its overall mandate funded from Grant-in-Aid but it would need to operate in a more agile and streamlined way.

3.7. A joint ICL/BL project team was formed in order to plan the transition from project to UKRR as-a-service which involved the following key steps;

a. A workshop was held in London with c90 representatives from University Libraries in order to assess the appetite and guide any changes to the service design. Accordingly it was decided – (1) the service should continue, (2) there was sufficient trust to reduce the back up (preservation) copies from two to one, (3) the service needed re-engineering and (4) there ought to be an Advisory Group formed to oversee the governance and deployment of the new service.

b. One of the first steps was for the BL project team to process map the as-is situation, which due to the time the project has run, was a significant challenge. The process map involved many iterations and involvement from all areas of the BL and ICL in order to get a true representation, see Fig. 7 below;

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[11] https://www.bl.uk/on-demand

Fig. 7 the UKRR process map of the (before) as-is operation.

c. The next stage was to design a solution around the requirements and building on the knowledge, expertise and groundwork from the project. In undertaking this particular step, new challenges came to light;

   i. **Systems** – transfer of the LARCH system from ICL to the BL and replacement of the BL database from Access 2003 to a SQL based version. The plan is that ultimately it will link into Aleph (the British Library's library system) and provide one location describing the entirety of BL holdings.

   ii. **Scarcity checking (1)** – Suncat (the national database describing journal holdings information) previously managed by Edina and funded by Jisc was due to retire. The replacement system under design by Jisc is the National Bibliographic Knowledgebase (NBK)[12] which will provide a single, national view of UK monograph and journal holdings – this went live on the 1st August 2019. The BL team worked very closely with the Jisc technical team to ensure the complexities of scarcity checking were reflected within the NBK design and toolkit.

   iii. **Scarcity (2)** – When UKRR comprised of a closed group of members it was relatively easy to nominate the back up (preservation +2) copy holders. Once the service was opened up to anyone, there needed to be a system that could allocate a custodian of the backup "scarce" (+1) copy linking into the NBK development above. What the BL team did find was that in c80% of the cases when checking holders of duplicate copies, perhaps unsurprisingly, the Legal Deposit Libraries (Oxford and Cambridge) held a copy. Both organizations have the rule that they only de-duplicate within their faculty libraries and don't rely on other libraries. This gave the BL team the confidence that (having agreed with Oxbridge) they could undertake scarcity checking against Oxbridge holdings and thereby limit the amount of checking that was required. Notwithstanding that, an agreement was designed that encouraged the

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[12] The National Bibliographic Knowledgebase (NBK) was launched by Jisc on the 1st August 2019 and is currently scaling up levels of its range of services and capabilities - https://www.jisc.ac.uk/rd/projects/national-bibliographic-knowledgebase

bigger University libraries to also agree to retain preservation copies – this was called the Collaborative Collection Retention Agreement (CCRA).

iv.   From the above, the four pillars of service success were created and formed the basis of the service (reengineered) design, see Fig. 8 below;
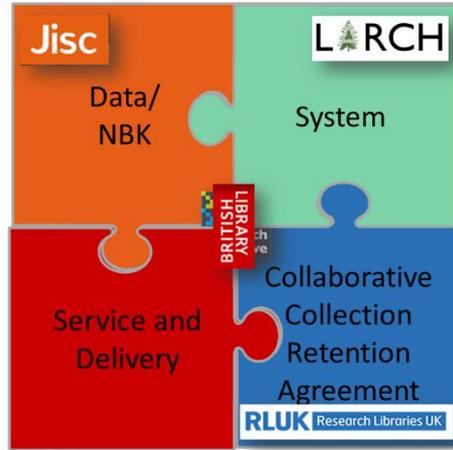

Fig. 8 the UKRR as-a-service 4 pillar model.

d.   Having put in place the above building blocks, the BL team could then press ahead and redesign the new service, significantly simplifying and streamlining the operation and reducing the cost of delivery. Another key aspect of this approach was putting the emphasis on a "right-first-time" approach – this involved communicating to the audience group the importance of submitting complete and accurate submissions thereby ensuring a smooth process flow. See revised process map in Fig. 9;
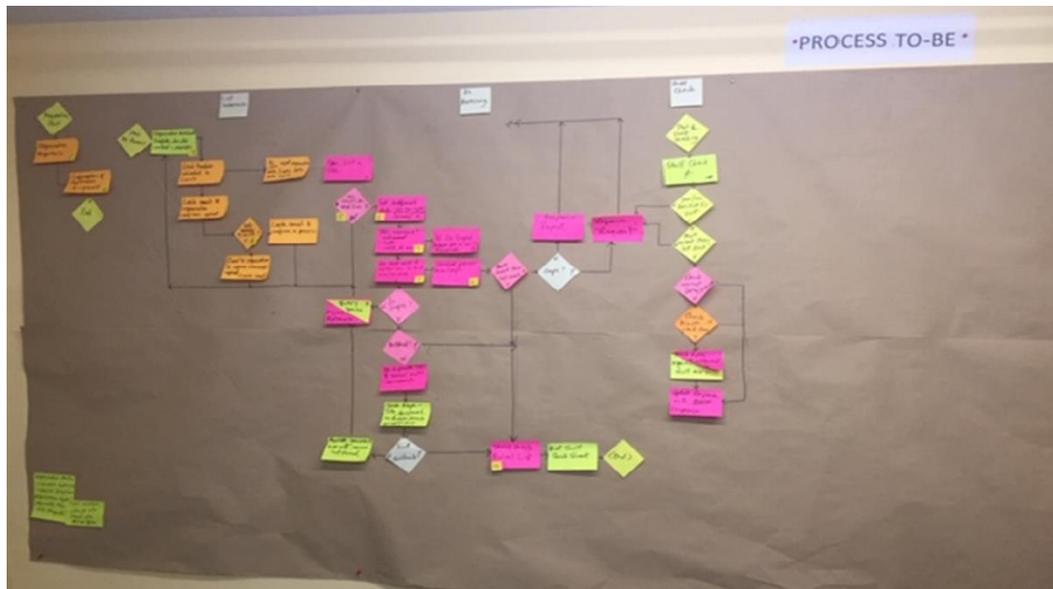
Fig. 9 Revised UKRR Process map following re-engineering.

e.   Communication was also a key aspect of an effective service roll out. Together the ICL and BL teams developed a communication strategy that included – Newsletters, Webinars, conferences, focus groups, direct communications, visits and transfer of the

website to the BL. Having added UKRR to the BL repertoire, the new web pages[13] were designed (see Fig. 10 below) and monthly communication updates are sent via the News-Page;
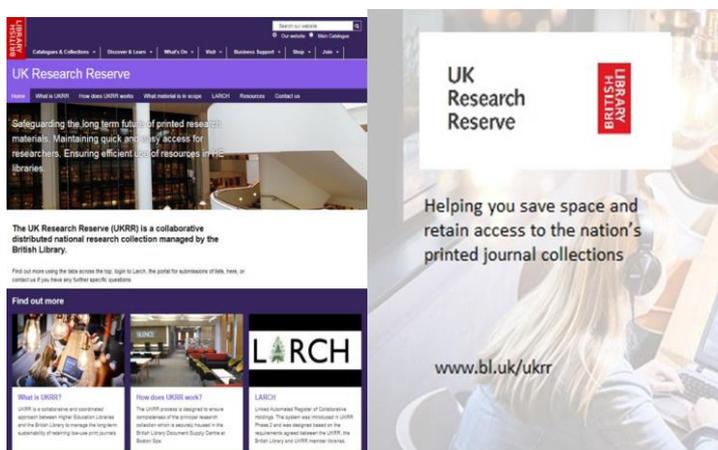

Fig. 10 BL UKRR web pages.

3.8. The service is currently in a ramping up phase as the new system and associated processes become embedded and the capacity is better understood. The latter is an important point such that the team can forecast lead-times and thereby accept new lists from organizations, provide accurate deadlines and feed into the overall production plan. In terms of comparing the new service with what the project offered, re Fig. 11 below;

Factor	Before	After
Submission Process	Larch, Response Sheet	(no change)
Requirement of user	BL team quality check and adjust	Onus on "right 1st time" and list quality/completeness
Eligibility	Membership approach	Open to anyone
Lead time	Ave turn-round time = xxx . (for previously offered items)	Could be longer (smaller team).
Prioritisation (of lists)	First come first serve	Priority to Holding Libraries and organisations who have undertaken scarcity themselves.
Communication and Information	www.UKRR.ac.uk	www.bl.uk/ukrr
Preservation (scarce) back up	+2 copies within membership group	+1 within Holding Library group (CCRP)
Scarcity and retention	Use Suncat to check and record.	Use NBK to check and record.
BL database of previous checks	Based on Access 2003 with manual effort – links to Aleph/Larch.	(New) based on SQL optimised and APIs to Aleph/Larch/NBK.

Fig. 11 Comparison matrix of the UKRR service – project v BL "business as usual" service.

3.9. The project formally ceased in March 2019 at which point by using the original CHEMS approach to updating the predicted benefits, the benefits could be updated. In financial terms they equated to – £29m in capital savings, and over £18m in recurring estate management costs which basically translates to:

'Every £1 invested in the UK Research Reserve has delivered £4 in value to the Higher Education sector'.

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[13] https://www.bl.uk/ukrr/resources

The project has freed up an impressive **128 km of shelf space** in the participating libraries which subsequently realized other benefits following the repatriation of this space - see case studies below.

The following case studies from participating University Libraries are taken from the UKRR Final Report (currently in draft):

Involvement in UKRR has meant that we have been able to renovate three of our medical libraries. UKRR disposal reduced the journal stock in these libraries to a level such that we were able to relocate them in library stores across campus, and therefore gave us in effect a whole floor in each library to use for study space. (King's)[14].

In addition to re-developing the JF Allen departmental library in 2010, UKRR has more recently helped with ongoing activities in the Main Library, for example, the creation of an additional 70 study seats in summer 2018. (St Andrews)[15].

UKRR has not only enabled us to provision more spaces, but up the quality in the process. These spaces include lots of quiet individual study spaces, some more comfortable individual spaces, and bookable group work facilities with shared screens, all of which have been very popular.

For a large research institution such as ours it is critical for us to know that we are acting responsibly in managing our collections. We recognise that our collections are of value beyond the University of Leeds, and that we have a responsibility to curate our collections with the needs of the wider, and future, research community in mind. We want to preserve collections, not necessarily all locally, but certainly at a national level. (Leeds)[16].

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[14] Appleyard, A., Banks, C., Grindley, N., Hosking, J., Larch, N., Stubbs, T., Yang, D. and institutional contributors, (2019). *UKRR Final Report* [draft, forthcoming]. London: UKRR. [Draft viewed 5 August 2019]. p.39

[15] Appleyard, A., Banks, C., Grindley, N., Hosking, J., Larch, N., Stubbs, T., Yang, D. and institutional contributors, (2019). *UKRR Final Report* [draft, forthcoming]. London: UKRR. [Draft viewed 5 August 2019]. p.42

[16] Appleyard, A., Banks, C., Grindley, N., Hosking, J., Larch, N., Stubbs, T., Yang, D. and institutional contributors, (2019). *UKRR Final Report* [draft, forthcoming]. London: UKRR. [Draft viewed 5 August 2019]. pp.143-144

The type of library space being phased out at the University of Leeds (photo used with the permission of the University of Leeds).

The space vacated as a result of UKRR houses a new learning café with comfortable seating and Wi-Fi access. Our first payment from UKRR was used to provide power on study desks for the use of laptops.(Kingston)[17].

'At Imperial's Central Library there were two basement spaces used for storage of serials. As a result of UKRR, this space has been redeveloped into the Enterprise Lab, which is a flexible workspace primarily focused on allowing groups of budding entrepreneurs to work together and draw on the knowledge of the experts-in-residence. This shows how library storage space has been used to help meet institution-wide space requirements, enhancing the value of the offer of the College' (Imperial College London)[18].

Uninspiring basement space at Imperial College London. Photo used with the permission of Imperial College London.

The new Enterprise Lab developed in the basement as a result. Photo used with the permission of Imperial College London.

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[17] Appleyard, A., Banks, C., Grindley, N., Hosking, J., Larch, N., Stubbs, T., Yang, D. and institutional contributors, (2019). *UKRR Final Report* [draft, forthcoming]. London: UKRR. [Draft viewed 5 August 2019]. p.44

[18] Quote and photos used with the permission of Imperial College London.

3.10.   In terms of outcomes for the Higher Education Library sector the statement from Cambridge sums it up well…

> "*Institutions now rely on the structures and processes that UKRR provides in collection decision making. Libraries do not want to release space at any cost; and responsible collection management is vital, with UKRR providing a framework for this, and peace of mind that collection management is done at a level beyond the local. (We) appreciate how these trusted processes are an important part of being able to advocate with academics, in that the processes ensure ongoing access and preservation. The value of UKRR and those who have worked on the project over the years is that it established policies and frameworks that give assurance to the academic community that the active management of collections and retention of printed material is important for future generations. This has been very important over a period of rapid cultural and technological change*"[19].

3.11.   In terms of outcomes for the British Library - The BL sees this as fitting as part of the remit of the national library and a way of deepening relationships with researchers at all levels, enabling them to understand better how the collections are managed, the challenges and success faced by libraries, and the sustainability of collections that they care about. This will be increasingly important as we move towards new UKRR type challenges such as;

a. Designing a national approach to Monographs.
b. Exploring the feasibility of a digital version and/or the creating of access repositories.
c. Building on the work already done with non-HE libraries such as Rothamsted Research (an independent agricultural science research institute) and collaborating with other sectors including public libraries.
d. Working with colleagues from across Europe such as the European Print Initiatives Collaboration (EPICo) which formed in 2015, bringing together practitioners working in the field in order to share strategies and best practice amongst the European community.

4. Summary

4.1. UKRR has given us a visionary example of library leadership and policy making – through putting in practice a vision of libraries working together and realizing their collective potential to serve people within and outside their institutions in a new way, creating new spaces for new types of research and study, while at the same time protecting and preserving collections, as well as saving money.

4.2. As our services migrate further towards digital we still must adhere to our mandate of preserving (print) collections and offering continued access. As contemporary material moves inexorably towards digital publication we need to reinvent ourselves and diversify. Figure 12 illustrates how, by building on the experience, expertise and breadth of our print holdings, through digitization and digital collection development and management, we can create a cohesive strategy going forward.

4.3. The British Library's 43-acre facility at Boston Spa north of Leeds has underpinned research and library services across the UK for over half a century. It is recognized internationally as

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[19] Appleyard, A., Banks, C., Grindley, N., Hosking, J., Larch, N., Stubbs, T., Yang, D. and institutional contributors, (2019). *UKRR Final Report* [draft, forthcoming]. London: UKRR. [Draft viewed 5 August 2019] p.67.

one of the great library infrastructure centres of the world. From its strategic location at the geographic centre of Britain, its storage operations ingest collections (both print and digital), preserve and make accessible. Our narrative will be grounded in the original visionary 1960s idea of Boston Spa as the UK's 'library at the heart of the system' – re-shaped for the 21st century as a combination of digital and physical infrastructure.

Fig 12: Model describing the BLs strategic collection management and development approach.

Acknowledgments