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Document Delivery and Resource Sharing: Global Perspectives

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Foreword

Resource sharing is an essential library service. It is essential to the learning, research, and teaching that our libraries support. It is, in fact, essential to the exercise of our human right to share knowledge. Resource sharing professionals recognize the essential nature of their work and the necessity of sharing their own knowledge. This publication represents international colleagues from IFLA's Document Delivery and Resource Sharing Section and the HERMES Project coming together to share their resource sharing knowledge with library workers around the world. The learning gained by its readers strengthens the global resource sharing network and, by extension, the global sharing of knowledge.

Tina Baich

2021-2023 Chair, IFLA Document Delivery & Resource Sharing Section Standing Committee
Member, HERMES Scientific Committee.

Preface

This publication has been written in the framework of the European Erasmus+ project “HERMES - Strengthening digital resource sharing during COVID and beyond”, with the aim of promoting a wide reflection about the meaning and practices of resource sharing involving the worldwide information community and fostering the emergence of a common perspective. Resource sharing is an important and long-standing function of libraries, but resource sharing practices are rarely featured in library and information science programs. This publication is intended to provide librarians, library practitioners, as well as teachers, researchers, and students of universities and research organizations and other interested parties, a foundation in resource sharing principles, practices and management. This publication provides an overview of where things stand today with resource sharing, including key trends, challenges, opportunities, and priorities. The publication seeks to address international resource sharing, exploring the current state of European and international resource sharing systems and the governing laws and regulations and includes case studies and best practices from various countries. Despite authors representing ten countries and efforts to seek information from many more, the authors acknowledge that the publication is not exhaustive on all countries, regions, and laws around the world. Instead, this work should be a good point of entry for people new to resource sharing, but also stimulating for experienced professionals. The author’s ambition is for it to become a must-read piece in the wider resource sharing world and inspire more libraries to participate in open resource sharing practices both locally and internationally.

International Resource Sharing Manifesto

Background: The devastating impact of the COVID-19 pandemic highlighted the worldwide role that library resource sharing services can play. The Resource Sharing during COVID-19 (RSCVD) initiative launched in April 2020 made a breakthrough in advancing international resource sharing. A network of international libraries volunteered to support the mission to help libraries keep supporting their users during the pandemic lockdown, and RSCVD is still supporting the mission to date. We make the following statement to create a solid foundation and inspire library resource sharing activities worldwide. We hope this document helps librarians advocate for resource sharing projects, advance the resource sharing role and expand its boundaries, and reduce barriers to access. In addition, it should encourage librarians and libraries to redefine their role and expand their resource sharing operations.

Access to information is an essential element to achieve the sustainable development of human society, and it is one of the fundamental human rights. Since their inception, libraries have played a crucial role in providing access to information to those who need it. However, no library can possess all of the information its users need. At a certain point, a collaboration between libraries is necessary to provide access to all of the information our patrons are seeking.

Helping others in need is the first sign of civilization, and sharing is an act of filling the gap between haves and have-nots. Hence, resource sharing librarians from around the world have expressed the importance of library resource sharing activities that cross national boundaries. By providing the following principles, we wish to provoke ideas and actions for a resource sharing network that better serves our ever-connected global community.

Reducing Boundaries

We see libraries as cultural heritage institutions, where the collections we build are not just for the community a library serves, but for all of humanity. Hence, we firmly believe that the materials available for a library's users should be available for other libraries' users globally. Our mission is to enable access to library materials to be as open as possible, in the most efficient manner for our users and for libraries around the world.

Sharing Trends

As members of the information society, we need to be keenly aware of new types of information media available now and in the future. We have to continuously seek ways of sharing those new media among libraries.

Ease of Access / Facilitating Access

As access to information is one of the fundamental human rights, we should adequately provide different modes of access to satisfy our users' diverse technical and logistical circumstances.

Innovation

Information technology continues to develop rapidly. Resource sharing librarians, in turn, must be knowledgeable about current information technology and must continuously seek new ways to facilitate better, more efficient, and more user-friendly resource sharing practices among libraries.

Free and Equal Access

We understand that resource sharing activities require significant resources, both financial and human. However, our actions seek to ensure equal access to information for all communities regardless of their financial resources. Hence, we will try to relieve the burden for our users and libraries by seeking the most economical ways to share resources. We encourage libraries to charge minimal or no fees to one another in order to help eliminate financial barriers to access.

Copyright and International Agreements

In doing our work, we value and acknowledge the importance of copyright protection and its purpose of promoting the progress of science and arts in service to all humanity. Hence, we follow local copyright laws and guidelines, observe international agreements, and propose changes or additions necessary to help our communities.

We live in a diverse global community with different languages, ideas, religions, and cultures. But we believe the differences among us are not for us to judge, criticise, or attempt to change. They are for us to understand and embrace by studying and accepting with an open mind. Access to information by sharing library resources is one of the best ways to appreciate our differences and make our society more harmonious. Hence, as people say, knowledge is indeed power. Yet sharing knowledge is an action to give knowledge power. We resource sharing librarians are proud of being the ones who take such critical measures to make our world a better place for all humankind.

Resource Sharing Background & Current Environment

Objective: *We provide an overview of where things stand today with resource sharing, including key trends, challenges, opportunities, and priorities. This should be a good point of entry for people new to resource sharing, but also stimulating for experienced professionals. Our ambition is for it to become a must-read piece in the wider resource-sharing world.*

Why do we share resources and how have those methods evolved?

The role of libraries is to preserve collections for future generations and to provide access for scholars, learners, and those seeking inspiration. Through their acquisition and collection management policies, libraries aim to provide a range of resources that respond best to the needs of their communities. It is not possible for each library to hold a copy of everything; therefore, collection items that are unique, or available only in small numbers, can be inaccessible to some users.

Interlibrary Lending (ILL), or inter-lending, is a longstanding methodology enabling libraries to “lend and/or borrow” physical collection items between each other, thus allowing users to access a much wider range of content than what’s owned by the library with which they are affiliated. This approach was expanded in the 1980s as the physical lending method of gaining access to collections was updated to include limited copying. This more convenient way of collaborative sharing was entitled document delivery or document supply,¹ and subsequently increased exponentially.

As we entered the new millennium, the sharing options for ILL and document delivery evolved from copying and mailing paper copies of book chapters or journal articles to sharing them digitally, either by scanning physical items or using born-digital documents. Accordingly, the term “resource sharing” was coined and presented a new conceptualization of ILL. This allowed the patron to access an item via their desktop while the sharing was still being coordinated by their affiliated library. Resource sharing (Litsey, 2017) mobilised the collective strength of libraries to work towards a situation where every library user has the possibility to access the book, article, or other material they need to achieve their goals. This collaborative approach continued to build on the key foundations of ILL, using technology as a powerful tool for enabling cross-disciplinary research and an improved user experience.

Technology continues to drive the pace of change and, in turn, user expectations. The arrival of “digital” has opened up the way in which researchers and scholars are able to access content,

¹ https://en.wikipedia.org/wiki/Interlibrary_loan

providing more opportunity to share resources, but with it, more complexity. The arrival of digital has changed the way in which we work, changed the way in which we collect, and accordingly changed the types and range of services that libraries provide to support academic learning and research.

What are the trends and drivers shaping the way in which libraries share resources?

The way in which libraries share resources is also influenced by their type, the most common of which is the university library. University libraries are often termed ‘the heart’ of the university providing collaborative study spaces with access to both physical and digital collections alongside publisher subscribed content. ILL is an essential component of this infrastructure thereby increasing the available repertoire of study materials beyond that held by the university library.

ILL is often delivered within the confines of consortia groups who may undertake resource sharing by using a common technology platform. The ability to obtain a collection item relies on:

- **Find:** The ability to search and find the item, who owns it, and whether they are willing to share it. Sometimes, depending on the volume of requests, less sophisticated systems may require users to send out speculative requests in the hope that a lending library will respond.
- **Share:** The ability to use a system platform to retrieve and send the required item to the user, along with the appropriate administration. This may or may not include a fee that also needs administrating. In recent years, physical collection transfers across international boundaries have required a customs duty fee.
- **Use:** The ways in which patrons use ILL content are defined in countries’ legislation. Usually this is framed around academic use only.²

Some of the most well-known community-led consortia groups were formed around the use of a software platform, such as Network Inter-Library Document Exchange (NILDE)³ and OCLC WorldShare Interlibrary Loan (ILL).⁴ Similarly, the Ex Libris product Rapid ILL⁵ is initiating the formation of new consortia groups using this common technology.

Sharing collaborations work very well if the concepts of “lending” and “borrowing” are evenly balanced; if not, then “net lenders” (those who lend more than they borrow) incur more time and cost. Some countries or collaborations address this by charging a transaction fee to recover costs (as in the UK), but of course this presents another layer of bureaucracy to manage. More

² The ability to undertake ILL outside of copyright varies but is usually via an exception in law. E.g., in the United Kingdom this is called “library privilege,” and in the United States, “fair dealing.” This permits sharing and limited copying of library collections between academic (and national) libraries for the purposes of academic (non-commercial) research. For more information, see Chapter 3.

³ <https://nildeworld.bo.cnr.it/en/faq/what-nilde>. See also (Mangiaracina et al., 2008)

⁴ <https://www.oclc.org/en/worldshare-ill.html>

⁵ <https://rapid.exlibrisgroup.com/>

recently, some sharing technologies have included a ranking algorithm to assist libraries in balancing their ILL borrowing and lending volumes with partner libraries (as in the NILDE network, (Mangiaracina & Tugnoli, 2012)).

Other organisations that are part of this ecosystem are commercial document supply and delivery vendors generally used to take advantage of their search and sharing technology platforms and/or to gain access to a wider range of harder-to-find content. These suppliers can also provide access to contemporary published content if they have the licence agreements in place, which can be convenient as they will aggregate various publishers into one user interface. They may also be able to offer access more cheaply than publishers can directly, due to bulk discount arrangements. Examples include the British Library (BL on Demand), the SUBITO document delivery service, the Copyright Clearance Centre (Get it Now), and Research Solutions/Reprints Desk (Article Galaxy).

Other factors driving the ways in which libraries offer access to their users are summarised below. Each presents both a challenge and an opportunity that will require related stakeholders to “think outside the box.”

- Digital publishing and associated costs for libraries have prompted challenges from libraries towards the publishing community. As the number of combined physical and digital publications increases exponentially (including open access — see below), so does the cost. As traditional business models evolve and users consider whether to purchase (collect) or to subscribe (connect), costs will continue to rise.
- Open access is growing. There are various ways that ensure the key disciplines of publishing (peer review, copyright, citation, etc.) are respected, but in an affordable and sustainable way. It will require careful navigation to integrate open access alongside more traditional published collections that ensure rights are protected, libraries get “value for money,” and publisher business models are balanced.
- Digital sharing has provided convenience, simplicity, and complexity! The ability to share content illegally without respect for copyright is difficult to control and, as in the music industry, will require a new collaborative approach to resolve in conjunction with the points above.
- Digital literacy needs to develop at the same pace as technical innovation to take advantage and maintain user satisfaction. Librarians must now be “information specialists” to help users navigate complex research services and get an optimal experience.

How was resource sharing impacted by the COVID-19 pandemic, and what was the response from libraries?

Around the world, people were confined to their homes in an attempt to contain the virus COVID-19. Losing access to their physical locations affected many businesses and organisations, including libraries. Without access to physical collections, the emphasis shifted to digital and digitised collections in order to maintain continuity of library services.

“Necessity is the mother of invention,” as the saying goes. Accordingly, libraries around the world created interventions that embraced innovation in a bid to connect users with content. Among them:

- HathiTrust’s Emergency Temporary Access Service (ETAS). See <https://www.hathitrust.org/ETAS-Description>
- Archive.org’s National Emergency Library, launched on March 24, 2020, and closed in June 2020. Since that date, books in this library have been available to borrowers one book at a time by way of Controlled Digital Lending. See <https://blog.archive.org/2020/06/11/impacts-of-the-temporary-national-emergency-library>.

Accordingly, the RSCVD service was designed by members of the IFLA Document Delivery Resource Sharing (DDRS) Committee during the pandemic with the aim of supporting libraries unable to access collections due to lockdown.

With the help of committee members, librarian volunteers worldwide, and technical help from the Open Access Button team (OA.works), the committee created a simple way for libraries worldwide to request materials from other libraries on behalf of their users. This initiative was entitled “Resource Sharing in the Time of COVID-19 (RSCVD),” and libraries worldwide were encouraged to use the service.

The use of the service involved librarians completing a speculative request form in which they specified the bibliographic information relating to the material they needed. The requests were fulfilled only electronically, so no physical loan request would be fulfilled. Upon receiving the request, committee members and librarians would first verify affiliation and make sure that the request was coming from a library, not an individual. Accordingly, librarian volunteers would check their digital collections and provide the materials through the OCLC Article Exchange Service, RapidX, Italian GARR Filesender, or another secure electronic delivery tool available to them.

Of course, the service could not guarantee that all the requests could be fulfilled, but the majority were accessible via the vast digital collections held by participating libraries. The requesting library would receive an email notification when an item was ready, and the notification would include the link and password to retrieve the materials.

Up to the time this book is being published, RSCVD has involved more than one hundred volunteer libraries from 21 different countries, which have fulfilled requests coming from many countries worldwide (see table below). The majority of the volunteer libraries are university libraries. However, there are also national research centers (like the Italian CNR or the Spanish CSIC) and national libraries (like the U.S. National Agricultural Library, the Qatar National Library, and the National Library of Scotland).

The table below shows the global reach in terms of countries and the number of requesting libraries per country.

Countries	Libraries	Countries	Libraries
Argentina	9	Netherlands	2
Australia	18	New Zealand	2
Austria	3	Norway	18
Bangladesh	1	Oman	2
Belgium	3	Pakistan	3
Brazil	14	Philippines	7
Canada	27	Qatar	6
China	2	Republic of Korea	14
Czechia	5	Russian Federation	1
Finland	5	Saudi Arabia	2
France	1	South Africa	7
Germany	1	Spain	53
India	12	Switzerland	3
Ireland	18	Turkey	27
Italy	268	Ukraine	1
Japan	2	United Arab Emirates	2
Kazakhstan	2	United Kingdom of Great Britain and Northern Ireland	177
Kyrgyzstan	1	United States of America	151
Lebanon	6	International Organizations	6
Mexico	2		

From April 2020 to January 2023, RSCVD Initiative has received 22,142 requests and 13,537 (61%) of them were fulfilled.

On 2021 the initiative was funded by the European Erasmus plus programme⁶, by means of the project “HERMES - Strengthening digital resource sharing during COVID and beyond”. HERMES aims to reinforce the RSCVD service and to ensure its sustainability in the future by a multifaceted action:

- the development of a new open source resource-sharing software named “Talaria”;
- the publication of an up-to-date reflection of the meaning and practices of Resource Sharing (i.e., the present book);
- a set of open educational materials and free distance training courses for librarians, university students and researchers. The materials aim at strengthening their

⁶ <https://erasmus-plus.ec.europa.eu/it>

competencies in searching and retrieving quality academic documents through Open Access tools and library resource sharing services.

For more information on this service, please see the following:

- RSCVD Home and Request form: <https://rscvd.org/>
- RSCVD FAQ: <https://rscvd.org/faq>
- RSCVD list of volunteers: <https://rscvd.org/volunteers>
- HERMES project: <https://www.hermes-eplus.eu>

References

Litsey, R. (2017). *Resources Anytime, Anywhere. How Interlibrary Loan Becomes Resource Sharing*. Chandos Information Professional Series.

<https://www.sciencedirect.com/book/9780081019894/resources-anytime-anywhere#book-description>

Mangiaracina, S. et al. (2008). NILDE: developing a new generation tool for document delivery in Italy. *Interlending & Document Supply*, 36(3). 167–177.

Mangiaracina, S., & Tugnoli, A. (2012). NILDE reloaded: A new system open to international interlibrary loan. *Interlending & Document Supply*, 40(2) 88-92.

Overview of National & International Resource Sharing Systems

***Objective:** We provide an overview of the key elements of the structures of national and international resource sharing systems. Without looking to be exhaustive, we identify key common characteristics, as well as areas of difference between systems. The chapter should allow the reader to develop a framework to understand, rapidly, how resource sharing systems work in other countries and in general.*

The foundation of resource sharing cooperation

With the expansion of the internet, online library catalogues, and electronic communication platforms during the 1990s, interlibrary loan became an important resource for libraries to support researchers and supplement collections. Libraries were easily able to locate specific resources and request them for loan. Throughout the 1990s and 2000s, interlibrary loan grew and expanded from the sharing of physical resources to document delivery services that offer quick access to electronic documents. With this evolution, the number of computer systems, services, and networks to support document delivery also expanded exponentially to meet demand.

For smooth and effective resource sharing, it is crucial to set an agreement between libraries directly or as part of shared network affiliation. Points of consideration include (“Resource sharing concept”, in (Litsey, 2017):

- Type of material to be shared
- Length of loan period
- Renewal processes
- Payment for lost or damaged materials during transactions
- Implementation of tools
- Procedures for delivering and returning materials (including fees)
- Bibliographic access to local holdings
- Intellectual property use
- Limitations, restrictions, etc.

Technical infrastructure may influence the implementation of resource sharing agreements, yet technology plays a crucial role in supporting resource sharing operations. Various infrastructures are possible, including but not limited to:

- Centralised interlibrary loan services tools and applications to help library staff in managing requests. These tools manage the routing of requests automatically between libraries.

- Peer-to-peer resource sharing networks that allow libraries to transmit requests to specific libraries using standards such as ISO 10160/10161⁷ or ISO 18626⁸.
- Integrated library systems (ILS) that allow groups of libraries on centralised infrastructure to share collections with each other (also called “group circulation”).

For many practical reasons, including a common language and the ease of shipment of physical resources, many of the document delivery systems itemised in this chapter are country or region-based networks of libraries. This coordination among a close group of libraries with shared policies has many advantages, particularly when it comes to sharing physical resources. In many cases, these regional networks are able to provide the depth and breadth of resources that a library requires.

Multi-country and large international document delivery networks also exist. These monolithic interlibrary loan services aggregate metadata describing massive amounts of material from libraries all over the world and available on request. An example is OCLC’s WorldShare Interlibrary Loan, which automates libraries’ interlibrary borrowing and lending processes through the largest resource sharing network (Breeding, 2013).

This kind of model has pros and cons.

Pros:

- Large groups of libraries are open to share their resources. Thus, items can be found easily.
- Large networks are particularly advantageous for the sharing of digital documents, most commonly journal articles or book chapters. The sharing of digital copies of articles across international borders is no hindrance.
- Some international document delivery platforms also support requesting and sharing of physical resources, and it is up to the libraries to set policies about whether they lend internationally and how much they may charge to help cover shipping and handling expenses.
- Large-scale networking can streamline library operations and create efficiencies.
- Expansive networks offer greater access to content, reducing library acquisition costs by offering a “borrow, not buy” model of user research support.

Cons:

- Higher expenses.
- Long times to fulfil requests that require international shipping or that seek items from very specialised collections.
- Fulfilment may be delayed if there is no uniform agreement to supply materials quickly.

⁷ ISO 10161-1:2014 Information and documentation — Open Systems Interconnection — Interlibrary Loan Application Protocol Specification — Part 1: Protocol specification
<https://www.iso.org/standard/66170.html>

⁸ ISO 18626:2021 Information and documentation — Interlibrary loan transactions
<https://www.iso.org/standard/79013.html>

Libraries also engage in resource sharing and other activities by banding together in consortia. Under the umbrella of a consortium, libraries work together to share resources and coordinate activities on a regional, national and/or international level. A consortium could consist of a single type such as the Ontario Council of University Libraries, a consortium of Ontario's 21 university libraries (Canada); or it could be multi-type such as Couperin, an academic consortium in France that includes more than 250 universities, research organisations, and others. Moreover, a library consortium can have a single purpose, such as that of Hathitrust, which focuses on digital preservation; or support multiple activities, such as those of Ohiolink, which offers a variety of services. Engaging in consortia helps libraries in licensing, sharing materials and expertise, addressing library-related issues, partnering in shared repositories, virtual chat, and more (Consortial Awareness Group, 2022).

When consortia bring together a group of libraries that do not run a single integrated library system (ILS), successful reciprocal borrowing involves the implementation of some technical infrastructure to manage transactions. The components of this infrastructure may include a union catalogue that gathers the collections of the libraries' members, connectors to each library's ILS, and a request management system. The main scenario here is to enable a patron from a single library to search the holdings of all members within a consortium, request an item from any member, and have that item delivered to the patron's original library for pick-up (Breeding, 2013).

No single network connects all libraries worldwide. When the network(s) that a library subscribes to cannot supply a given resource, libraries must resort to direct outreach to a library outside of their network, which can be slow and cumbersome. This external communication is often handled via email messaging, but more and more libraries are turning to computer communication standards such as ISO 18626 to support inter-network communication.

Libraries and document delivery workers are tenacious and resourceful and, in many cases, have been able to meet the needs of their users through this patchwork of document delivery networks and direct outreach. The COVID-19 pandemic highlighted a weakness of this model of organisation. When a given country or region was forced into lockdown, those local document delivery networks stopped functioning. Physical collections were off limits. This was when the IFLA Document Delivery and Resource Sharing (DDRS) Standing Committee stepped in to help libraries in need through the advent of the RSCVD programme. RSCVD was able to support libraries where consortia and regional networks had ceased to function, but perhaps even more importantly for the future, RSCVD was also able to facilitate the bridging of networks when libraries simply did not have the resources required by researchers. The continuation and further development of the RSCVD programme will support library cooperation by ensuring that no library is cut off from access to information.

Analysis of the range of resource sharing systems that exist, in the EU and beyond, with a focus on common elements and areas of difference

The overview of resource sharing systems in the EU and beyond is based on data provided by librarians, who were asked to fill in a survey containing the key elements of resource sharing systems in their region. Past and present members of the IFLA DDRS Section, [OCLC members](#), participants in previous ILDS conferences, contributors to the [International ILL Toolkit](#), RSCVD volunteers, and personal contacts jointly contributed to the data collection. From September 2021 to March 2022, 70 librarians from all over the world were consulted, 30 of whom answered by filling in the survey with the information requested. The survey results are ordered alphabetically by country or region to allow for easy consultation.

Without looking to be exhaustive, some generalisations can be made from the evidence collected. With the exception of WorldShare ILL from OCLC, the majority of the resource sharing systems itemised in this chapter are country or region-based networks of libraries. Many of these programmes have a long tradition and rely on advanced systems, while some do not, sometimes due to social and political obstacles. It is clear that almost all the libraries feel the advantages of cooperating with other libraries of the same region/country/type, at least to share a union catalogue and to exchange resources, even if they do not have a structured resource sharing system.

As for International ILL, this is more complicated, because it is rare to have similar rules for libraries that are not on a single, organised network. This can most likely be due to different copyright laws and licensing agreements from one country to another, but also to the expense and complexity of international shipments.

This overview of resource sharing networks and systems focuses on these four key elements:

- **Catalogue:** A shared or aggregated set of holdings for libraries on the system or network.
- **Software:** Request management software to facilitate the exchange of interlibrary loan requests among affiliated libraries.
- **Agreement:** Shared principles of cooperation around which the libraries organise. These may include whether they charge for supplying material, the length of due dates for physical items, and delivery method for copy requests.
- **Directory:** Libraries maintain a directory to facilitate communication and sharing. This is sometimes integrated into the catalogue and/or software.

COUNTRY	ARGENTINA	NETWORK	Liblink https://www.istec.org/liblink/liblink-initiative/?lang=en
UNION CATALOGUE	http://metabuscador.istec.org/ The ISTECC Metasearch engine unifies searches in the initiative catalogues and public collections of resources available under open access policies. It is a free service, aimed at facilitating and speeding up access to information on documentary resources through simultaneous and distributed searches of online catalogues.		
SOFTWARE	https://www.istec.org/liblink/project/celsius-3/ In the Liblink initiative, software called Celsius 3 has been developed to manage the exchange of documents. The software was created in 2000, and has since undergone more than 10 version upgrades. Celsius 3 is used for exchanges between different institutions. It also serves as an assistant for searching bibliographic collections; it accumulates historical records to facilitate the search, it manages users who request documents, and it compiles statistics, in order to measure the quality of the exchange within the network. The software allows for the existence of three different types of user: the researcher or teacher who requests a search and receives the document in their personal space; the administrator who performs the searches, requests, and delivery in the web space; and the common user, who can get a transparent view of the service's statistics.		
AGREEMENT	<ul style="list-style-type: none"> ● Online catalogue for online consultation. ● Updated information on the stocks of magazines in the online catalogue. ● Suitable staff in the area of institutional libraries. ● Tools and software suitable for document scanning. ● Configuration of an instance of Celsius 3 and staffing to handle it. 		
FEE per request	<i>Not available at time of publication</i>		
DIRECTORIES	<i>Not available at time of publication</i>		
INTERNATIONAL ILL	<i>Not available at time of publication</i>		

COUNTRY	AUSTRALIA	NETWORK	<p>Libraries Australia – LADD https://docdel.librariesaustralia.nla.gov.au/vdx/ Libraries Australia is a network of the National Library of Australia and state, university, scientific, medical, public, and school libraries and other cultural institutions. It is formed into a huge, collaborative network around Australia and New Zealand, allowing the exchange of resource sharing materials.</p>
UNION CATALOGUE	<p>Trove https://trove.nla.gov.au/ Trove's content comes from more than 1,000 libraries around Australia as well as other institutions and international collections with relevance to Australia. With just one click at trove.nla.gov.au, users can access a wealth of resources — more than 90 million items about Australia and Australians.</p>		
SOFTWARE	<p>The protocol is described and defined in two standards: ISO 10160 — Interlibrary Loan Application Service Definition, and ISO 10161 — Interlibrary Loan Application Protocol Specification. Libraries Australia Document Delivery (LADD) can interoperate with other ISO ILL systems such as OCLC's VDX system, Relais International's Relais system, or Ex Libris' Alma system. ILL transactions are sent from one ILL system to another via the LADD Gateway.</p>		
AGREEMENT	<p>To retrieve Trove metadata, people and organisations must agree to terms and conditions prior to obtaining a Trove API key. These API terms constitute a binding agreement between the user and the National Library of Australia governing use of the Trove API. Members of Trove Collaborative Services have access to LADD, giving them:</p> <ul style="list-style-type: none"> • Access to the network of Trove partner libraries, as well as the New Zealand Te Puna interlibrary loan service. • Streamlined payments with a single billing and payment service for all interlibrary loans. • Flexibility to find and acquire items using the LADD interface or a library's own interlibrary loan system, including VDX, Relais, or Alma. 		
FEE per request	<p>Base interlending charge: \$28.80 per item. Base copying charge: \$18.70 per item for up to 25 pages; \$4.40 for every additional 25 pages. Delivery charges:</p> <ul style="list-style-type: none"> • \$9.90 for Express Post or equivalent for copies. • \$15.20 for Express Post or equivalent for loans up to 3 kg. <p>Service levies:</p> <ul style="list-style-type: none"> • \$37.40 for Rush (conditions: LADD should be accompanied by telephone call, fax, or email). • \$56.10 for Express (conditions: LADD should be accompanied by telephone call, fax, or email). 		

DIRECTORY	<p>ILRS https://www.nla.gov.au/ilrs/</p> <p>ILRS is the directory of Australian interlibrary loan and document delivery services and National Union Catalogue (NUC) symbols. Details on service-level standards and recommended delivery prices are available in the ILRS code.</p>
INTERNATIONAL ILL	<p>Most Australian libraries do international ILL.</p> <p>Overseas libraries can verify available resource sharing material in Trove, but also in OCLC WorldCat. The requests can be made through OCLC or by email directly to the possible lender.</p> <p>There is a common OCLC interlibrary loan fee for foreign libraries.</p> <p>IFLA vouchers can be used to pay for requests, or payment can be made via Visa or Mastercard.</p>

COUNTRY	AZERBAIJAN	NETWORK	AZLIC (Azerbaijan Library and Information Consortia) and AzLA (Azerbaijan Library Association), launched in the late 1990s, are the central organizations that facilitate the network of ILL.
UNION CATALOGUE	AZLIBNET Azerbaijan Library Network Union catalogue of public libraries http://alisaweb.libraries.az/		
SOFTWARE	National Library Integrated System: ALISA (Automated Library Information System of Azerbaijan) https://www.ultra.az/front/en/products/12 All public libraries under Ministry of Tourism, RA; University of Economics, Baku Foreign Library Integrated System suppliers: OCLC WorldShare Management Services, United States. Institution: ADA University. https://adauniversity.on.worldcat.org/v2?lang=en IRBIS 64, QPNTB, Russian Federation. Institutions: Central Scientific Library, Azerbaijan National Academy of Sciences (https://bit.ly/3ltTn8R); Presidential Library (https://bit.ly/3ziIvjD); Library of Baku State University (https://bit.ly/3zBm1AA); Library of Azerbaijan Medical University. Destiny, Follett School Solutions, United States. Institutions: Baku American Center of the Azerbaijan University of Languages and the Embassy of United States of America (https://bit.ly/3zhkDw8); Western Caspian University (https://bit.ly/3AhBb8B); National Aviation Academy (https://bit.ly/3lv2bLF)		
AGREEMENT	Legal circumstances: The main base documents in the process of ILL are: <ul style="list-style-type: none"> ● Law of the Republic of Azerbaijan on Copyright and Related Rights ● https://www.wipo.int/edocs/lexdocs/laws/en/az/az001en.pdf ● Agreements between information resources' supplier and client institution ● Law and regulations of partner institution(s) — local and global ● Individual preference of authors in accordance with legislation Technical circumstances: <ul style="list-style-type: none"> ● Usage objection: archiving (TIFF) or public use (PDF) ● Easy access to resources Social circumstances: The libraries separately provide reference and research consultations, and indirect access to academic and research materials from partner institutions (academic libraries), including those in the corporate sector (R&D departments).		
FEE per request	The ILL fee may vary between \$15-25 USD. Partner universities may exchange free of charge.		
DIRECTORY	<i>Data not available at time of publication</i>		

**INTERNATIONAL
ILL**

The first implementation of the latest ILL technologies on OCLC's WorldShare Management Services in the ADA University Library. Currently only academic library representing with its collections in www.worldcat.org

The ILL module is executed for both physical and electronic resources. The system shares e-resources internally with a built-in feature, Article Exchange. The Article Exchange feature allows files to be uploaded for pickup by library users globally. Only people with the correct URL and password combination are able to download the file. Once a document has been uploaded, it is available for 30 days or five views.

The main ILL operations and services include efficiency management, usage statistics, policies, service configuration, and Article Exchange.

Currently, IFLA vouchers can't be used to pay requests or be accepted to pay for services.

COUNTRY	BALKAN AREA (Slovenia, Serbia, North Macedonia, Bosnia and Herzegovina, Montenegro, Bulgaria, Albania and Kosovo)	NETWORK	COBISS+ (Co-operative Online Bibliographic Systems and Services) https://www.cobiss.net/ All the national systems of country members are interconnected into the COBISS.net regional network. An open invitation for cooperation has been offered to libraries in Croatia.
UNION CATALOGUE	<p>COBISS represents an organisational model of joining libraries into a national library information system with shared cataloguing. Its resources include the COBIB union bibliographic/catalogue database and local bibliographic databases of participating libraries, the COLIB database on libraries, and the CONOR authority database. The National COBISS Centre (NCC) is a library information service that carries out all the activities related to linking of libraries in the COBISS system.</p> <p>Shared cataloguing (COBISS3/Cataloguing) enables a rational division of labour and saves time in the onerous procedure of cataloguing library materials and managing catalogues. Databases contain bibliographic records for different types of library materials as well as records of performed works. At the end of 2015, there were more than 10 million bibliographic records in the seven COBIB shared databases (union catalogues); and there were more than 23 million bibliographic records in the local databases of more than 780 libraries. All participants in the system and in the COBISS.net network can access records through the COBIB union bibliographic/catalogue database.</p> <p>COBISS+ (the new version of the COBISS/OPAC application) provides libraries and library users with online access to the following databases:</p> <ul style="list-style-type: none"> · COBIB union bibliographic/catalogue database; · local databases; · other databases in the COBISS system (specialised databases that are a part of the COBISS system); · other information resources (foreign and domestic specialised databases). <p>COBISS+ is freely available to all users. All users can search the COBIB shared catalogue of libraries (default setting), local databases, and most other databases without restrictions. The search is restricted in some foreign databases because of licence agreements with providers; in those cases, an authorised user log-in is required.</p>		
SOFTWARE	<p>https://www.cobiss.net/cobiss-platform.htm</p> <p>The COBISS system was designed in 1987 by the Institute of Information Science (IZUM) in Maribor. So far, more than 500,000 bibliographic records have been exchanged between the systems.</p> <p>The COBISS3/Interlibrary Loan software module includes all the procedures in which</p>		

	<p>the library acts as a library ordering materials from other libraries, and all the procedures in which the library acts as a library supplying materials from its own collection. The module allows:</p> <ul style="list-style-type: none"> · processing received COBISS3/ILL orders (received from other libraries using the COBISS3/Interlibrary Loan software module); · processing received COBISS/OPAC orders (library members' orders); · accessing home library catalogues and reserving home library material; · ordering material from the supplier or the library closed stacks, reordering, forwarding orders; · cancelling orders from the supplier or internal orders; · recording the receipt of material from the supplier or the home library material; · delivering material to a customer; · returning material from customers to the supplier or to the library closed stacks; · preparing different notifications for customers and suppliers; · preparing invoices for legal entities — partners acting as customers or payers of the services, and printing the sales ledger; · notifying (email, SMS, etc.) users about received items, non-delivered items and loan period expiry date. <p>COBISS+ is supported by most web browsers. It is possible to change the interface's appearance by changing some of the web browser settings.</p>
AGREEMENT	<p>https://www.cobiss.net/cobiss-net_agreement.htm</p> <p>The agreement applies among the libraries in the system: a free service provided by IZUM, which is a public institution established by the government of the Republic of Slovenia as an information infrastructural service for Slovenian science, culture, and education. It offers education for participating libraries/librarians.</p>
FEE per request	Free of charge for participating members.
DIRECTORY	<p>COLIB: https://plus.si.cobiss.net/opac7/colib/search?lang=en (example for Slovenia).</p> <p>It contains records with data on the libraries of the countries that participate in the COBISS system as full or associate members. In addition to various information and contact details, it also contains data identifying the library within the COBISS system uniformly and data required in the COBISS software modules.</p>
INTERNATIONAL ILL	IFLA, LIBER, IATUL guidelines

COUNTRY	BELGIUM	NETWORK	IMPALA <p>Impala is the Belgian web-based ILL and DD system. More than 500 libraries use it for ordering and delivering documents.</p> <p>Every type of library can affiliate with Impala and at the same time decide upon the role it wants to play in the system: requester, supplier, or both.</p>
UNION CATALOGUE	<p>Catalogues for scientific libraries are: UniCat: Belgian collective scientific and academic catalogue: https://www.unicat.be/ Anet-catalogus: Network of University of Antwerp-affiliated libraries: https://anet.uantwerpen.be/desktop/uantwerpen/ Antilope: Belgian journals catalogue: http://anet.be/opac/opacantilope</p> <p>Impala is linked to union catalogues such as Antilope and UNICAT using OpenURL technology. Belgian scientific libraries that wish to do so can add their holdings to these union catalogues.</p>		
SOFTWARE	<p>Impala was developed in 1991 by the library of the University of Antwerp. In 1998, it became a web-based platform, and in 2001 electronic document delivery was incorporated in its service. Impala is a resource sharing software that handles all types of requests, physical and electronic. Electronic requests are submitted to and delivered via the virlib server, the system for secure electronic document delivery.</p> <p>The user interface is available in Dutch, French, and English.</p>		
AGREEMENT (or Policy)	<p>Impala expects exchanges to be made in compliance with copyright law and licences. Adhering to these rules is the responsibility of the participating libraries.</p> <p>Every group of libraries has made agreements on fixed prices for the delivery of documents. These default price settings are not binding and can always be altered by the delivering library or library types.</p> <p>Official contracts are an option if specifically requested by a participating library.</p>		
FEE per request	Fixed prices (but not binding)		
DIRECTORIES	Only subscribed Impala users can view contact details of the participating libraries.		
INTERNATIONAL ILL	<p>It is only possible to submit requests when subscribed to Impala. Some foreign libraries are subscribed. However, it's up to the delivering library to decide if international ILL can be granted through Impala.</p> <p>Some Impala libraries do participate in international ILL, but via different platforms such as Rapid ILL, OCLC WorldShare, or via e-mail and IFLA vouchers after searching Unicat or WorldCat.</p>		

COUNTRY	CANADA	NETWORK	There are multiple consortia and regional groupings that span the country. Academic libraries are mostly divided into four regions across the country, while public libraries are mainly organised by province and territory. In some regions, interlibrary loan services are coordinated through a central body, while in other regions each library takes on delivering interlibrary loan services itself. Some consortia make use of a shared catalogue, which allows the sharing of collections by means of the shared catalogue functions rather than through traditional interlibrary loan channels.
UNION CATALOGUE	<p>National Catalogue https://www.bac-lac.gc.ca/eng/services/national-union-catalogue/Pages/national-union-catalogue.aspx Library and Archives Canada (LAC) has an agreement with OCLC to host the national catalogue for the collections held at libraries in Canada. The national catalogue is named Voilà. Libraries in Canada contribute holdings to Voilà by subscribing to OCLC services. Small public and academic libraries may receive funding from LAC to subscribe to OCLC services.</p>		
SOFTWARE	<i>Data not available at time of publication</i>		
AGREEMENT	<p>COPPUL/OCUL/CAUL-CBUA/BCI Resource Sharing Agreement. https://curbaca.files.wordpress.com/2021/10/coppul-ocul-caul-bci-resource-sharing-agreement-2020-redacted.pdf This agreement covers many Canadian universities and covers items such as cost, loan periods, and system compatibility.</p>		
FEE per request	Free of charge for participating members		
DIRECTORY	<p>Library and Archives Canada https://sigles-symbols.bac-lac.gc.ca/eng/Search LAC provides a directory, in which you can search for Canadian libraries by Canadian Library Symbol, OCLC symbol, library name, and city. You can also search by library type or region (province/territory). The directory provides interlibrary loan information and contact information for the library.</p>		
INTERNATIONAL ILL	<p>There are generally fees associated with the supply of interlibrary loans from Canadian collections. Canadian libraries prefer to receive requests through resource sharing systems, such as direct between ILL systems, submitted via a form, or via OCLC WorldShare. Information for borrowing libraries, including fee schedules, is often provided on the library's website. Library and Archives Canada does not currently participate in international ILL.</p>		

COUNTRY	CHINA	NETWORK	<ul style="list-style-type: none"> ● CALIS (China Academic Library and Information System), http://www.calis.edu.cn ● CASHL (China Academic Social Sciences and Humanities Library), http://www.cashl.edu.cn/ ● NSTL (National Science and Technology Library), https://www.nstl.gov.cn/ ● NLC (National Library of China), http://www.nlc.cn ● Shanghai Library, https://library.sh.cn/
UNION CATALOGUE	<ul style="list-style-type: none"> ● China Online Library Cataloguing System, a Z39.50-based online union cataloguing system led by National Library of China, has more than 3,500 member libraries across the county. http://olcc.nlc.cn/ (website for librarians). Users can access more than 80 million books, serials, authority data, and library holding resources of the National Library of China via http://find.nlc.cn. ● China Academic Library & Information System Online Catalogue: http://opac.calis.edu.cn/opac/. The CALIS union catalogue database is mainly built and shared by 1,400 academic libraries around China. Users can access more than 68 million books, serials, authority data, and library holding resources. 		
SOFTWARE	<p>CALIS, CASHL, NSTL, National Library of China (NLC), and Shanghai Library have their own independent interlibrary loan systems. The CALIS ILL system can interoperate with the ones of NLC and NSTL. Also, CALIS provides an open API to the other resource discovery systems so they can access the CALIS ILL system.</p>		
AGREEMENT	<p>To be able to retrieve CALIS and CASHL metadata, individuals and institutions must register to become a user or member. Member libraries can use the CALIS ILL system free of charge. CALIS provides the following services:</p> <ul style="list-style-type: none"> • Unified user authentication. • Access to all CALIS resources and direct submission of ILL requests. • Streamlined payments with a single billing and payment service for interlibrary loans. <p>Similar to other consortia, libraries or users need to sign an agreement with the sharing consortia.</p>		
FEE per request	<ul style="list-style-type: none"> • Base interlending charge: CNY 40 per item among CALIS member libraries; delivery charges vary depending on parcel weight, delivery method and destination country/area. • Base copying charge CNY 0.3 per page among CALIS member libraries. 		

	<ul style="list-style-type: none"> The fees are subject to the provisions of supplying libraries if supplying libraries are non-CALIS members.
DIRECTORY	<p>eDe: http://yide.calis.edu.cn</p> <p>eDe is a SaaS-based ILL & DDS system of CALIS. Users can access the catalogues of CALIS, NLC, Shanghai Library, KERIS (Korea Education & Research Information Service), JULAC (Hong Kong Joint University Librarians Advisory Committee), etc.</p>
INTERNATIONAL ILL	<p>CALIS, NSTL, NLC, Shanghai Library, etc. participate in international ILL and document delivery for libraries worldwide. The requests can be made through OCLC or SUBITO or by email directly to the possible lender. Payment can be made via IFLA vouchers or direct billing in U.S. dollars, Chinese Yuan, or other currencies.</p>
Notes	<p>CALIS and CASHL, founded by different funds of the Ministry of Education and administered by Peking University, are the two most influential nationwide academic library consortia in China. Currently CALIS has more than 1,800 member libraries across the country. CASHL aims to acquire, preserve, and cooperatively share foreign and Chinese periodical resources in the humanities and social sciences and intends to become the “National philosophy and social science resources platform.” Currently CASHL has nearly 900 member libraries and more than 154,000 individual registered users.</p> <p>NSTL, a sci-tech information resource sharing system founded by the Ministry of Science and Technology, offers web-based information services to the patrons of scientific and technical communities all over China.</p> <p>NLC has built an interlibrary loan relationship with more than 500 libraries from 67 countries.</p> <p>Shanghai Library builds successful cooperation in China and around the world with library consortia or organizations, such as OCLC, SUBITO, etc.</p>

COUNTRY	FINLAND	NETWORK	<i>None</i>
UNION CATALOGUE	<p>The union catalogue in Finland is called Melinda: https://melinda.kansalliskirjasto.fi/</p> <p>The Finna.fi service can also be used to discover materials in Finnish libraries, museums and archives: https://finna.fi/</p>		
SOFTWARE	<p>There are at least six different library management systems currently in use in Finland. Some of the library management systems have ILL functionality, but libraries may be using other solutions for managing interlibrary loans. ILL requests and other communication between libraries are mostly handled via email and web forms. Helsinki University Library is using Ex Libris Alma for resource sharing/ILL.</p>		

AGREEMENT	There is no common agreement on fees or terms and conditions.
FEE per request	Each library has its own price list and terms of service.
DIRECTORY	<i>Data not available at the time of publication</i>
INTERNATIONAL ILL	Some libraries, such as Helsinki University Library, provide international ILL services as well and accept IFLA vouchers as payment.

COUNTRY	FRANCE	NETWORK	SUDOC The University System of Documentation (http://www.sudoc.abes.fr/cbs/xslt//DB=2.1/LNG=EN) is the national system for the shared cataloguing of documentary resources available to all universities and research libraries of France. The Sudoc network is composed of 163 documental institutions, representing 1,536 academic and research libraries. SUDOC is under the supervision of the public Agence bibliographique de l'enseignement supérieur (Abes).
UNION CATALOGUE	The Sudoc catalogue (http://www.sudoc.abes.fr/cbs/xslt//DB=2.1/LNG=EN) is a French collective catalogue containing nearly 13 million bibliographic records describing all kinds of documents. Sudoc also catalogues the series collections of periodicals held by around 1,500 non-higher educational library institutions (such as town libraries and other resource centres). Lastly, Sudoc's mission is to list all dissertations/theses produced in France. The new bibliographic records are created by cataloguers directly in the collective catalogue thanks to the WinIBW cataloguing tool. During the following night, the record is downloaded into the local catalogue of the institution that created the item. Then, cataloguers across the network can use the record if they have the corresponding document.		
SOFTWARE	https://abes.fr/en/reseau-sudoc/le-reseau/etablissements-membres/ Launched in 1992 at the initiative of the sub-directorate of libraries of the Ministry of Higher Education, the computer master plan for the university library network entered its operational implementation phase at the end of 1995. Following the call for tenders for a new system, the Central Bibliographic System (CBS), proposed by the Dutch company Pica was selected for its performance and robustness to form the basis of the Sudoc, which opened in April 2000. Since 2008, following the takeover of the Pica company, OCLC has been responsible for the maintenance and functional upgrades of CBS and WinIBW within the framework of agreements and technical collaborations. In 2020, the CBS is still the heart of Sudoc and the WinIBW cataloguing tool is the daily working interface for the teams of cataloguers producing data for Sudoc.		
AGREEMENT	https://abes.fr/en/reseau-sudoc/sudoc-outils-et-services/peb/ Interlibrary Loan (ILL) — or Remote Document Delivery (DRD) — is part of the document sharing system implemented within the framework of the Sudoc and Sudoc PS networks. This national system allows users registered in a library to obtain, in the form of a loan or photocopy, any documentary resource (article, book, thesis, journal, etc.) identified in the Sudoc catalogue as being “available for ILL” in one of the 1,800 libraries participating in the ILL network. Within documentary institutions, the ILL system is based on tools interconnected with Sudoc (Supeb and PebWeb-pro).		

	<p>About 10 large foreign libraries currently participate in the French ILL network. There is no official national agreement about either the fees or the time to fulfil requests. Most libraries supply documents free of charge on a reciprocal basis, and there is a moral commitment to supply the documents as soon as possible. Thus far, ILL is possible only for printed documents and dissertations.</p>
FEE per request	<p>Most of the libraries supply documents free of charge on a reciprocal basis.</p>
DIRECTORY	<p>http://www.sudoc.abes.fr/cbs//DB=2.2/LNG=EN/START_WELCOME Around 3,400 institutional libraries are involved in Sudoc network activities. The Library List directory has all the information necessary for their identification and location, and for using the services they offer (such as address, opening hours, and specialities).</p>
INTERNATIONAL ILL	<p>French libraries do international ILL. Foreign libraries can find French bibliographic information in Sudoc and also in OCLC. The requests usually can be made by email directly to the possible lender. There is not a common fee for foreign libraries. IFLA vouchers may be accepted to pay for the services.</p>

COUNTRY	GERMANY	NETWORK	<i>None</i>
UNION CATALOGUE	<p>K10Plus / GVK (union catalogue of 10 federal states (Baden-Württemberg, Bremen, Hamburg, Mecklenburg-Vorpommern, Niedersachsen, Saarland, Sachsen, Sachsen-Anhalt, Schleswig-Holstein, Thüringen, Stiftung Preußischer Kulturbesitz))</p> <p>BVB (union catalogue of the federal state Bayern) / International ILL via Bavarian Library Network</p> <p>hbz (union catalogue of the federal state Nordrhein-Westfalen and part of Rheinland-Pfalz)</p> <p>hebis (union catalogue of the federal state Hessen and part of Rheinland-Pfalz)</p> <p>KOBV (union catalogue of the federal states Berlin and Brandenburg)</p> <p>The Karlsruhe Virtual Catalog (KVK) is available for researching resource sharing material from German libraries.</p>		
SOFTWARE	The software used differs depending on the union catalogue. Interlibrary loans within Germany are possible between the systems.		
AGREEMENT	The Karlsruhe Virtual Catalog (KVK) is available for researching resource sharing material from German academic libraries. Information on partial collections of individual libraries can be found at SUBITO, WorldShare or the Bavarian Library Network.		
FEE per request	1-2 IFLA vouchers		
DIRECTORY			
INTERNATIONAL ILL	Most German academic libraries do international ILL. Overseas libraries can use KVK to verify available resource sharing material, while some metadata are also in OCLC WorldShare or SUBITO . The requests can be made by email directly to the possible lender or through the Bavarian Library Network , OCLC WorldShare, or SUBITO. IFLA vouchers can be used to pay for requests.		

COUNTRY	GREECE	NETWORK	IRIS
UNION CATALOGUE	https://opac.seab.gr/ The union catalogue IISaS gathers the catalogues of 24 university libraries. Some big university libraries do not belong to the network. IISaS is a catalogue of monographs and serials. For journals, there is the Hermes network that has 101,002 titles. For ILL, all universities use the IRIS system.		
SOFTWARE	IRIS communicates with the union catalogue in order to permit easy tracking of requested items. ILL staff may search for requested items in the catalogue directly via IRIS. IRIS facilitates the management and audit of ILL requests throughout a request's lifecycle, both for requesters and responders. Furthermore, it has the ability to automatically issue statistical reports. The system is compatible with ISO 10161 protocol for ILL in all stages of ILL service. Fretwell-Downing's Virtual Document eXchange (VDX) is the ILL software. http://www.unioncatalog.gr/ucportal/index.php?option=com_content&view=article&id=208&Itemid=192&lang=en		
AGREEMENT (or Policy)	An agreement covers some common guidelines accepted by IRIS libraries. For example, high quality is expected of ILL services between the libraries which participate.		
FEE per request	2-3 euros for articles; for books, it depends on the destination in Greece.		
DIRECTORIES	http://www.unioncatalog.gr/ucportal/index.php?option=com_content&view=article&id=309&Itemid=205&lang=en		
INTERNATIONAL ILL	Most (not all) IRIS libraries do international ILL. The request usually can be made by email directly to the possible lender. There is not a common fee for foreign libraries. IFLA vouchers may be accepted to pay for services.		

COUNTRY	HUNGARY	NETWORK	ODR (National Documentum-Supplied System)
UNION CATALOGUE	Inland requests: http://odrportal.hu Abroad requests: across the National Szécsényi Library.		
SOFTWARE	http://odrportal.hu		
AGREEMENT	Within Hungary, the library can send and receive documents across http://odrportal.hu . Outside Hungary, libraries can exchange interlibrary loan documents across the National Szécsényi Library.		
FEE per request	No fee for inland electronic requests. Fee per original (paper format) request from inland: 1,200–2,000 HUF (the post fee for returning the material). Fee per electronic request from abroad: 4,000–8,000 HUF. Fee per original (paper format) request from abroad: 4,500 HUF + 1,200–2,000 HUF (the post fee for returning the material).		
DIRECTORY	https://www.oszk.hu/en/interlibrary_document_supply		
INTERNATIONAL ILL	Outside Hungary, libraries can receive interlibrary loan documents across the National Szécsényi Library. Timeline for electronic request fulfilment: about 1 week. Timeline for paper format request fulfilment: about 3-4 weeks. The National Szécsényi Library bills for the cost of fulfilment.		

COUNTRY	ISRAEL	NETWORK	MALMAD , the Inter-University Center for Digital Information Services, acts as a consortium for the acquisition, licensing, and management of digital information services to Israel's universities and colleges.
UNION CATALOGUE	ULI - Israel Union Catalog		
SOFTWARE	Ex Libris Alma Resource Sharing (ISO and non-ISO)		
AGREEMENT	Universities: Free ILL (digital and physical), 10-week loans, joint courier agreement. Colleges: Free ILL (digital and physical), 4-week loans. Universities and colleges: Free digital, fee-paying physical.		
FEE per request	None		
DIRECTORY	ULI - Directory of Israeli Libraries		
INTERNATIONAL ILL	RapidILL, OCLC, SUBITO, NLM, National Library of Russia, BIBN and more		

COUNTRY	ITALY	NETWORK	<p>1) NILDE (Network for Inter-Library Document Exchange) https://nildeworld.bo.cnr.it/en NILDE is the largest resource sharing network in Italy with almost 900 hundred libraries consisting mainly of university libraries, as well as libraries in hospitals and health research institutions, public research institutions, and not-for-profit organisations.</p> <p>2) ILL-SBN https://www.iccu.sbn.it/en/sbn/ The National Library Service (Servizio Bibliotecario Nazionale - SBN) is the network of Italian libraries that includes state, local, university, school, public and private institutional libraries, grouped together into local hubs. ILL SBN is a cooperative interlibrary loan and document delivery national service.</p>
UNION CATALOGUE	<p>SBN (Servizio Bibliotecario Nazionale). The OPAC SBN Catalogue is the collective catalogue of the libraries participating in the National Library Service. ACNP (National Collective Archive of Periodicals). ACNP is the largest and most important Italian catalogue for periodicals, with its 2,5 million journal records, more than 1,5 million holdings from about 2 thousand Italian libraries.</p>		
SOFTWARE	<p>1) NILDE. <i>(The software platform and the network of libraries have the same name)</i> NILDE software is conceived in 2001 by the Library of the Area of CNR (Italian National Research Council) in Bologna, since then it has been updated and developed with innovative features. Based on the LAMP (Linux, Apache, MySQL, PHP) architecture, it can be used by any user with an Internet connection and a web browser. Thanks to the OpenURL technology, it is possible to link to NILDE the most used bibliographic and citation databases. The integration of NILDE with the Italian national catalogues (through Z3950 and MARC XML) simplifies the research and makes evident the holdings of the libraries in the RS network. NILDE has an internal built-in system for SEDD (Secure Electronic Document Delivery), which includes a digital Hard Copy Module to transform a PDF-text documents into a PDF-image document. The user interface is available in Italian, English, French and Spanish and the general website is currently available in Italian and English.</p> <p>2) ILL-SBN platform is integrated with OPAC SBN and with other catalogues via Z39.50 protocol, in compliance with ISO ILL Standard (10160-10161). It can</p>		

	also interoperate with national and international systems through the gateway HTTP-TCP/IP
AGREEMENT (or Policy)	<p>1) NILDE https://nildeworld.bo.cnr.it/en/content/rules_and_regulations The NILDE Services is a subscription-based service, operated by the CNR Area Library in Bologna. Participating libraries commit to:</p> <ul style="list-style-type: none"> • supply documents on a reciprocal basis, within a maximum of 5 working days and free of charge (unless there is a strong imbalance at the end of the year); • share its own periodicals catalog by participating in one of the national collective catalogs (ACNP, SBN) distribute the requests equally among the libraries of the network. <p>Exchanges are made in compliance with Copyright Law and licenses (see ALPE, the National Licenses database of Electronic Periodicals) The NILDE members pay an annual subscription fee.</p> <p>2) ILL-SBN https://www.iccu.sbn.it/en/interlibrary-loan-and-document-delivery-ill-sbn/how-to-join-ill-sbn/index.html agreement to define partnership: requesting and/or supplying library, provide documents at national and/or international level via the ILL SBN server, answering within 48 hours.</p>
FEE per request	<p>1) NILDE Free of charge for member libraries (unless there is a strong imbalance at the end of the year between the libraries)</p> <p>2) ILL-SBN charges can be requested</p>
DIRECTORIES	<p>1) NILDE https://nildeworld.bo.cnr.it/en/content/libraries</p> <p>2) ILL-SBN https://www.iccu.sbn.it/en/interlibrary-loan-and-document-delivery-ill-sbn/partner-libraries/</p>
INTERNATIONAL ILL	<p>Most NILDE libraries do international ILL. Foreign libraries can find Italian bibliography in national catalogs (SBN, ACNP) and also in OCLC. The requests usually can be made by email directly to the possible lender. There is not a common fee for foreign libraries.</p> <p>IFLA vouchers could be accepted to pay the charge or the costs of the services.</p> <p>NILDE and SBN libraries follow IFLA ILL-DD principles and guidelines</p>

COUNTRY	LEBANON	NETWORK	LIDS Lebanese Interlibrary Loan and Document Delivery Consortium (LIDS) was formed in the early 21st century by a coalition of academic libraries. Later, the consortium became open to any library that satisfies certain conditions.
UNION CATALOGUE	<p>The National Library was destroyed in the Lebanese war (1975-1990) and only reopened its doors a couple of years ago. Academic libraries constitute the backbone of libraries in Lebanon. They are well-developed, with unique collections and up-to-date technology and services.</p> <p>Even though the LIDS consortium is facilitating resource sharing, Lebanon still does not have a union catalogue. In 2018, LIDS members started a project to create a union catalogue, but it was stopped due to the economic hardship that the country is facing. However, many Lebanese librarians are active on an international scale, either participating in the IFLA Document Delivery and Resource Sharing Committee or volunteering in the RSCVD initiative to advance resource sharing in Lebanon and put it on the world map.</p>		
SOFTWARE	With the exception of some libraries such as the American University of Beirut, the Lebanese American University, and Notre Dame University, most libraries don't have an ILL management system.		
AGREEMENT	LIDS consortium for local transactions; separate individual agreements with libraries that are not members of LIDS.		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORY	<i>None</i>		
INTERNATIONAL ILL	Many academic libraries in Lebanon lend internationally. There are some agreements between libraries in Lebanon and abroad to facilitate ILL, in addition to the RSCVD initiative that is facilitating international ILL.		

COUNTRY	LUXEMBOURG	NETWORK	<i>None</i>
UNION CATALOGUE	Union catalogue https://www.bibnet.lu/blog/?page_id=8446 Almost all libraries in Luxembourg — the national library, school libraries, municipal libraries, some specialised libraries, etc. — have their holdings appearing on a-z.lu. However, not every library/institution has joined yet. For example, some EU institutions' libraries are not included.		
SOFTWARE	The union catalogue resources can be seen (and sometimes accessed online) via a-z.lu . This catalogue uses the discovery interface that is supported by Ex Libris' Alma software.		
AGREEMENT	https://www.uni.lu/university/news/latest_news/national_library_and_the_university_sign_framework_convention		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORY	<i>Data not available at time of publication</i>		
INTERNATIONAL ILL	<i>Data not available at time of publication</i>		

COUNTRY	MEXICO	NETWORK	Red Amigos http://redamigos.mx/ Grupo Amigos: Red de Instituciones Mexicanas para la Cooperación Bibliotecaria (Friends Group: Network of Mexican Institutions for Library Cooperation).
UNION CATALOGUE	http://redamigos.mx/catalogo-en-linea The Red Amigos catalogue retrieves data from 15 catalogues of institutions of higher education, among others.		
SOFTWARE	Lib.Steps is an intelligent research system that combines metasearch and discovery technology, allowing users to search in real time through the different online resources used by institutions. It is not possible to manage interlibrary loans from this software, but it does allow users to see the availability, location, number of copies and bibliographic data of the resources of different institutions.		
AGREEMENT (or Policy)	There is a commitment among participating institutions to continue the collaboration and cooperation activities of the network — to exchange experiences, facilitate the exchange of information resources, participate in training programmes, conduct personnel training, and share programmes that benefit participating institutions.		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORIES	http://redamigos.mx/instituciones The directory of the Red Amigos includes a list of participating institutions with hyperlinks to their respective websites.		
INTERNATIONAL ILL	Most REBIUN (University Libraries Network) libraries do international ILL. Foreign libraries can find Mexican and Latin American bibliographies, along with academic catalogues, in OCLC. The requests can be made by email directly to the possible lender. There is not a common fee for foreign libraries. IFLA vouchers can be used to pay for requests.		

COUNTRY	NEW ZEALAND	NETWORK	<p>Te Puna Services</p> <p>Te Puna Services is a collection of online tools and services created with the help of New Zealand librarians to support the daily tasks of searching, cataloguing, sharing resources and managing collections. Public, tertiary and special libraries across New Zealand are members, and school libraries have access to cataloguing tools.</p>
UNION CATALOGUE	<p>https://tepuna.on.worldcat.org/discovery</p> <p>Te Puna Search gives access to what is held in New Zealand and worldwide. Te Puna Search is the view of the combined catalogue of New Zealand libraries on OCLC WorldCat, so users can limit their search to the holdings of New Zealand libraries or widen their search to include worldwide library holdings. The search of libraries worldwide includes open access material from Hathi Trust, the Internet Archive, and Google Scholar.</p>		
SOFTWARE	<p>Te Puna Services uses OCLC's WorldShare platform for cataloguing and interlibrary loan tools. Customers use WorldShare ILL for New Zealand and international ILL, and VDX for ILL with Australian libraries.</p>		
AGREEMENT	<p>The Puna Services is a subscription-based service, operated by the National Library of New Zealand. Te Puna Services makes it easier for New Zealand libraries to:</p> <ul style="list-style-type: none"> ● Describe their collections, through access to high-quality catalogue records ● Share resources with other New Zealand and international libraries using an ILL platform and automated billing system ● Discover and promote collections through a shared catalogue of New Zealand and international libraries on OCLC WorldCat <p>The Puna members pay an annual membership fee.</p> <p>New Zealand libraries must first be part of the New Zealand Interloan Scheme in order to participate in ILL. This scheme is run jointly by the National Library of New Zealand and LIANZA (Library and Information Association of New Zealand Aotearoa). Libraries do not have to be members of Te Puna Services to participate in ILL, but many libraries charge non-members a premium, as loaning outside of the platform incurs additional time and cost to the library.</p>		
FEE per request	<p>Interlibrary loan fees are set by individual libraries, but Te Puna Services suggests a base rate of 14 NZD per transaction. Many New Zealand libraries are members of a national reciprocal group, where the libraries choose not to charge each other for ILL.</p>		
DIRECTORY	<p>https://natlib.govt.nz/librarians/directory-of-new-zealand-libraries</p> <p>The Directory of New Zealand Libraries provides contact details for New Zealand libraries, including their New Zealand and OCLC library symbols, websites, ILL charging information, and contact details.</p>		

**INTERNATIONAL
ILL**

All Te Puna Services members have access to WorldShare ILL and therefore can supply and request international ILL. Libraries use OCLC's IFM billing system when loaning to international libraries.

New Zealand libraries currently use OCLC's VDX product for ILL with Australian libraries, due to a long-standing historical relationship and shared billing system.

COUNTRY	NIGERIA	NETWORK	<p>https://www.nln.gov.ng/</p> <p>The idea of the National Library of Nigeria began with the role of the Nigerian Division of the West African Library Association (WALA), whose efforts and activities were directly connected with the realisation of the dream for a National Library of Nigeria, a dream that dated back 1930s. Following the recommendation of WALA's Nigerian division, which in 1962 became the Nigerian Library Association, a Library Advisory Committee was established in the late 1950s. This committee had the assignment of working out plans for library services in the country and persuading the government to agree to set up a National Library. After attaining independence, the Nigerian government embraced the idea of a National Library as proposed by the association. The Ford Foundation of America agreed not only to finance but also provide the necessary expertise for a feasibility study. The survey recommended a National Library of Nigeria, thus backing up the recommendation of the Library Advisory Committee. Dr. Carl White, a distinguished scholar/librarian, was appointed to come to Nigeria in February 1962 to assist in putting into place the necessary technical personnel for the National Library. Thus, in September 1964, the government passed the National Library Act, establishing the National Library of Nigeria. This act was later replaced and substituted with National Library Decree No. 29 of 1970. It is a grade "A" parastatal organisation and the apex library in the country.</p>
UNION CATALOGUE	<p>https://virtual.nln.data.com.ng/</p> <p>National Union Catalogue (NUC) is a resource sharing service coordinated by the National Library of Nigeria for Nigerian libraries and their users. Compilation of a national union catalogue is one of the major tasks performed by the national library of any country. This fact is emphasised by the International Organisation for Standardisation (ISO). One of the statutory responsibilities of a national library is to build a national union</p>		

catalogue as part of fulfilling its responsibility not only to libraries within the country but also to the wider public — users at home and abroad. NUC is a national sharing tool containing data of the holding of participating libraries and a programme for meeting the objectives of Universal Availability of Publication (UAP). The programme was initiated in 1963 with five major libraries (Ahmadu Bello University Library, University of Nigeria Library, University of Lagos Library, University of Ife library, and National Library of Nigeria) in Nigeria participating in the scheme. The holdings of both monographs and serials were sent to the National Library of Nigeria to be published as a National Union Catalogue (NUC). Contributions from the participating libraries were in the form of card catalogues.

Since the inception of the programme, 102 libraries have participated in the scheme. In 1992, 97 libraries were regularly contributing catalogue cards to the scheme and the total number of cards in the union catalogue was estimated at 2 million. 2006 witnessed a drastic drop of contributory libraries to only six (Yaba College of Technology, West Africa Examination Council, Hezekiah Oluwasanmi Library, Lagos State University and National Library of Nigeria).

Problems:

It is clear that resource sharing activities have a significant role in African countries, especially in Nigeria. However, most libraries in Nigeria face many constraints in their resource sharing efforts. The factors are corruption; mismanagement of resources; inflation, which has eaten deep; and negligence of libraries and allied institutions.

Financial support for most libraries in Nigeria has long been on the decline. In fact, there is barely enough funding to pay for staff salaries. This unfortunate situation has drastically affected all aspects of library and information services in the country.

SOFTWARE

It is worthy of note that an attempt was made to computerise NUC in 2003. Dr. Nat Adeyemi coordinated a contract with a consulting firm, Kraun Nigeria Limited, based in Jos, to create a databank of NUC monographs and National Union List of Serials (NULOS) using CDS/ISIS Software. This project failed for lack of trained personnel, logistics and requisite infrastructure to cope with the work. Recently, there has been a shift of focus in NUC operation to the Online National Union Catalogue (ONUC). This could be termed as a shift from analogue to digital. Library operations the world over are ICT-driven, and ONUC operations are no exception. It is from this perspective that ICT was introduced into the operations of NUC in 2008.

<https://osarome.blogspot.com/2015/08/role-of-national-library-of-nigeria-in.html>

AGREEMENT	As mandated, the National Union Catalogue is open to all Nigerian libraries and information institutions in Nigeria, regardless of the library system used. The National Library of Nigeria has developed a framework for the emergence of ONUC. A pilot project will commence with a few libraries that comply with the criteria stated above. Afterwards, updating will be done periodically to improve features, and as many information institutions/resource centres as possible will be asked to join in this project, which will provide an opportunity to test the performance and features of the NUC by searching a very large nationwide catalogue.
FEE per request	
DIRECTORY	https://nigerbiblios.nlndata.com.ng
INTERNATIONAL ILL	The Online National Union Catalogue (ONUC) is an online national bibliographic control and national resource sharing tool containing data of the holdings of participating libraries and a programme for meeting the objectives of Universal Availability of Publications (UAP). This fulfils one of the National Library of Nigeria's statutory functions as contained in the enabling Act No. 29 of 1970, Section 2 (2a): "Maintenance of the National Union Catalogue (NUC) monographs and National Union List of Serials (NULOS) and also to develop and maintain a local area network of machine readable records and databank of National Bibliographic Control Service to be made available for effective resource sharing and free flow of information." The ONUC involves participating libraries sending their collections to the National Library of Nigeria's ONUC database after fulfilling the online data format requirement for addition to the ONUC records.

COUNTRY	POLAND	NETWORK	<p>https://academica.edu.pl</p> <p>The Academica digital interlibrary loan service for books and academic journals.</p> <p>Academica can be used by any Polish library (public, academic, university, school, or other) or institution that has a terminal.</p>
UNION CATALOGUE	<p>https://katalogi.bn.org.pl/discovery/search?vid=48OMNIS_NLOP:48OMNIS_NLOP</p> <p>Readers can search for items in the catalogue of the National Library of Poland (BN). The BN catalogue is linked to the catalogue of the Jagiellonian Library (the biggest university library in Poland), two provincial public libraries (in Kielce and Lublin), and two university libraries (those of the Catholic University of Lublin and the University of Toruń).</p> <p>https://academica.edu.pl</p> <p>In 2014, the BN launched Academica, a free digital interlibrary loan service for academic books and journals. It offers a quick way for libraries to borrow any publication from the BN's collections. Thanks to Academica, readers in the more than 3,600 libraries across Poland that have a terminal enjoy the same access to the BN's collections as readers in Warsaw. Academic publications are available, subject to the provisions of the Polish Act on Copyright and Related Rights, and the works themselves are subject to certain restrictions with regard to copying or printing parts of them. When readers are using a digitised copy via the Academica system, the physical copy in the BN storehouse is unavailable, just as if it were being used physically in a reading room.</p>		
SOFTWARE	<p>To use Academica, libraries need a terminal, which is provided free of charge by the BN. Libraries themselves choose what type of terminal they want. The recommended option is a separate terminal downloaded onto the computer's hard disk for free use by readers; however, it is also possible to use an SSD terminal that works "on demand," in which case the software is on a USB stick provided by the BN and only runs when requested.</p>		
AGREEMENT	<p>To gain access to Academica, the library should submit a membership request online or by post.</p>		
FEE per request	<p>Academica is available free of charge.</p>		
DIRECTORY	<p>For a full list of institutions using Academica, see https://academica.edu.pl/findLibrary.</p>		
INTERNATIONAL ILL	<p>Due to Polish copyright law, Academica is only available to Polish libraries. International interlibrary loans take place in the traditional manner.</p>		

COUNTRY	PORTUGAL	NETWORK	Biblioteca Comun https://bibliotecacomum.pt/projeto/
UNION CATALOGUE	https://bibliotecacomum.pt/catalogo/ <i>Catálogo Coletivo das Bibliotecas das Instituições de Investigação e Ensino Superior de Portugal.</i> The aim is the creation of a national bibliographic information platform of the libraries of research and higher education institutions, available via open access for all citizens. This aggregating service of bibliographic content from the catalogues of institutions of the scientific and higher education systems will work as a single point of bibliographic research, preferably aimed at the scientific and academic communities.		
SOFTWARE	<i>Data not available at time of publication</i>		
AGREEMENT (or Policy)	<i>Data not available at time of publication</i>		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORIES	<i>Data not available at time of publication</i>		
INTERNATIONAL ILL	<i>Data not available at time of publication</i>		

COUNTRY	QATAR	NETWORK	<p>Qatar National Library qnl_ill@qf.org.qa Qatar National Library acts as a steward of Qatar's national heritage by collecting, preserving, and making available the country's recorded history. In its role as a research institution with a preeminent heritage library, it fosters and promotes greater global insight into the history and culture of the Persian Gulf region. As a public library, it provides equal access for all of Qatar's residents to an environment that supports creativity, independent decision making and cultural development. Through all of its functions, it provides leadership to the country's library and cultural heritage sector.</p>
UNION CATALOGUE	<p>QNL https://www.qnl.qa/en With more than 1 million books, Qatar National Library's main collection covers all areas of knowledge, with materials available in several languages. Members also have online access to hundreds of thousands of journals, periodicals, magazines, eBooks, and multimedia items, available free of charge. The collection has been carefully selected by librarians to respond to the needs of all users.</p>		
SOFTWARE	<p>Qatar National Library's Library Management System is SIERRA. ILL transactions are being sent to an ILL-dedicated email address, qnl_ill@qnl.qa.</p>		
AGREEMENT	<p>As an active member of the Qatar Foundation Community, the library partners with many local educational, governmental, and cultural institutions. These collaborations facilitate knowledge exchange, educational development, research, skills training, joint events and exhibitions, and cultural preservation. The library has also signed memoranda of understanding with numerous regional and international institutions to encourage the digitisation and sharing of historical materials, the sharing of library expertise, and the development of library staff.</p>		
FEE per request	<p>Access to Qatar National Library's Interlending and Document Supply (ILDS) service is free of charge to all members of the library.</p>		
DIRECTORY	<p>ILDS: https://www.qnl.qa/en/library-services/dds/form#no-back</p>		
INTERNATIONAL ILL	<p>Qatar National Library offers ILDS to members and can access requests overseas. It is also an active volunteer in the IFLA DDRS RSCVD initiative.</p>		

COUNTRY	SPAIN	NETWORK	REBIUN https://www.rebiun.org/ Formed in 1988, REBIUN is the Spanish network of academic and scientific libraries. It includes the libraries of most public and private universities, and the libraries of the Consejo Superior de Investigaciones Científicas (CSIC) (Spanish National Research Council), a vast network of research institutes that comprise the most important multidisciplinary research centre of Spain.
UNION CATALOGUE	https://rebiun.baratz.es/rebiun/ The union catalogue gathers the catalogues of 95 libraries of universities, CSIC, and libraries associated with the network. The catalogue is updated bimonthly with the records sent by participants. It is a catalogue of monographs and serials. In order to check the availability of monographs or the journals' local holdings, you can find the link in the bibliographic record to the local catalogue of the institution that holds the item		
SOFTWARE	https://www.kronosdoc.com/gtbib-sod Most libraries use GTBIB-Sod software for both managing the interlibrary loan of returnables and the electronic delivery of documents in a safe way. This software takes into account all aspects of resource sharing, including economic management, statistics, and the use of email and web as communication tools between the resource sharing unit, the patrons, and the lenders. GTBIB uses Web and Z39.50 technologies that allow checking Spanish union catalogues such as REBIUN. It also interoperates with databases of full text documents, other ILL software, etc. Since 1991, this software has been designed and developed by library professionals, taking into account the suggestions of ILL staff through regular meetings and a distribution list.		
AGREEMENT (or Policy)	There is an agreement and guidelines, accepted by REBIUN libraries, in order to guarantee high-quality ILL service between participants; it covers turnaround times, quality of scanned images, etc. Since most document delivery is free of charge, there is a commitment to distribute the requests. Statistical data is produced.		
FEE per request	Common fees are established for national supply: 8 euros for loan; free for electronic delivery of copies in most cases.		
DIRECTORIES	https://directorio.gtbib.net/ The GTBIB directory includes all REBIUN academic and scientific institutions, and medical libraries of hospitals and public health-care institutions. You can find the contact data of the ILL units and the codes of the libraries.		
INTERNATIONAL ILL	Most REBIUN libraries do international ILL. Foreign libraries can find Spanish bibliographies in KVK and OCLC, in addition to the REBIUN catalogue. The requests can be made by email directly to the possible lender. There is not a common fee for foreign libraries. IFLA vouchers can be used to pay for requests.		

COUNTRY	SWEDEN	NETWORK	<p>Libris interlibrary loan</p> <p>More than 600 Swedish libraries lend material via Libris' interlibrary loan routine. These are primarily research libraries, but also regional library activities, loan centres and more. About 50 libraries in Denmark, Finland, and Norway report their journal holdings in Libris.</p>
UNION CATALOGUE	<p>Libris https://libris.kb.se/</p> <p>Libris is the joint catalogue of the Swedish academic and research libraries (plus about 20 public libraries) and is updated daily. The libraries providing cataloguing input all contribute jointly to building up the database contents. At present, the Libris database contains 6.5 million titles.</p>		
SOFTWARE	<p>In addition to cataloguing and search services, Libris provides an ILL service for making interlibrary loan requests between its member libraries.</p> <p>This is a web-based system developed in PHP/Mariadb that also includes an API. Member libraries can use this API to import request information to their local systems for further processing.</p> <p>(In addition to the Libris member libraries, the Libris ILL service is used by libraries from Denmark, Norway, Finland, and Iceland.)</p> <p>The following is a description of the API to the Libris ILL system: The primary function of the API is to enable libraries to import data from Libris to their local library system (ILS) and other automated systems. The API also provides a few functions that update the Libris ILL system.</p> <p>The Libris ILL application uses a subset of the data that is stored in the Libris library database, the parts that are relevant to the ILL functions. This data can be retrieved with this API, but if more data about a given library is needed, the Libris library database has its own API.</p> <p>For consistency with the other calls as well as for authentication, the library code for the calling library must be given as well. This may be a little confusing.</p>		
AGREEMENT	<p><i>Data not available at time of publication</i></p>		
FEE per request	<p>Book loans are free. The cost of ordering copies varies among libraries. Information on each library's fee can be found when placing an order in Libris' catalogue records.</p>		
DIRECTORY	<p>Libraries that are members of Libris can use the Libris Interlibrary Request system. The National Library of Sweden is responsible for the operation and development of the Libris Interlibrary Request system.</p>		
INTERNATIONAL ILL	<p>Most Swedish university and research libraries do international ILL.</p> <ul style="list-style-type: none"> ● Requests can be made by email or through Libris (for member libraries). ● Payment can be made via invoice or IFLA vouchers. 		

COUNTRY	SWITZERLAND	NETWORK	Swisscovery
UNION CATALOGUE	<p>Swisscovery https://swisscovery.slsp.ch 475 mostly academic libraries are affiliated. This gives Swisscovery access to more than 40 million books, periodicals, journals, and non-book materials and more than 3 million digital articles. Unfortunately, the holdings of some major libraries are missing in Swisscovery. E.g., the Swiss National Library, the University Library of Lausanne and a lot of the bigger Kantonsbibliotheken (regional libraries). Their holdings can be found in some smaller meta-catalogues.</p>		
SOFTWARE	<i>Data not available at time of publication</i>		
AGREEMENT	<i>Data not available at time of publication</i>		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORY	<p>https://www.switch.ch/edu/libraries/ A detailed list of the Swiss libraries (including addresses and contact details) and a listing of meta-catalogues can be found here.</p>		
INTERNATIONAL ILL	<p>All academic libraries and most of the bigger regional libraries do international ILL. The requests can be made by email directly to the possible lender. Some libraries use OCLC WorldShare or a form on their website. There is not a common fee for foreign libraries, but libraries within Swisscovery agreed to the following fees:</p> <ul style="list-style-type: none"> ● Books (per item): Europe, 2 IFLA vouchers; UK and overseas, 3 IFLA vouchers ● Digital or paper copies: 1 IFLA voucher (per 20 pages) ● Besides the national catalogues, you can find the holdings in KVK and pre-2021 publications in OCLC WorldCat. 		

COUNTRY	TAJIKISTAN	NETWORK	<i>None</i>
UNION CATALOGUE	<p>Libraries in Tajikistan are not developed well and are still working with old systems. There are several public libraries and children's libraries. There are also libraries within universities and schools that are not up-to-date and lack access to the internet. In 2012, a new building was opened for the National Library, which has now comfortable rooms and internet access.</p> <p>The only updated library in Tajikistan is the library of the University of Central Asia, which has unique collection and subscribes to many databases.</p> <p>No network exists in Tajikistan for libraries so they can connect or develop a union catalogue. There previously was a library association, but for unknown reasons it stopped working with Tajik libraries.</p>		
SOFTWARE	<p>No software is available. Libraries are still using either card filing or Microsoft Access databases.</p>		
AGREEMENT	None		
FEE per request	<i>Data not available at the time of publication</i>		
DIRECTORY	None		
INTERNATIONAL ILL	No		

COUNTRY	TURKEY	NETWORK	UBSS The National Document Supply System is a nationwide system that enables users to request both domestic and international documents (article, book, project, standard, international thesis, etc.) online. Users can obtain materials in the ULAKBIM database. The National Academic Network and Information Centre was founded by the Scientific and Technological Research Council of Turkey (TUBITAK) in 1996. This centre provides nationwide information and document services, both electronic and traditional, to meet information needs and contribute to academic information production.
UNION CATALOGUE	http://www.toplukatalog.gov.tr/ TO-KAT became operational in 2009.		
SOFTWARE	There are two automated systems used to monitor interlibrary resource sharing on a national scale: <ul style="list-style-type: none"> ● In 2007, a Cooperation Working Group of ANKOS (Anatolia Libraries Consortium) developed KITS (Interlibrary Cooperation Tracking System). Institutions started to manage all resource sharing activities online. ● Later in 2011, Turkey Document Supply and Loan System (TUBESS) was formed to facilitate resource sharing between academic libraries 		
AGREEMENT	KITS aims to monitor the resource sharing processes of higher education institutions between libraries/information centres online. It has enabled libraries to carry out a more systematic and easy interlibrary loan publication/document process.		
FEE per request	<i>Data not available at time of publication</i>		
DIRECTORY	https://yokatlas.yok.gov.tr/universite.php http://koha.ekutuphane.gov.tr/		
INTERNATIONAL ILL	Most Turkish libraries do international ILL. In Turkey, university libraries are using OCLC WorldShare, the British Library's document supply service, and IFLA forms for international ILL.		

COUNTRY	UNITED ARAB EMIRATES	NETWORK	<i>None</i>
UNION CATALOGUE	The union catalogue is available through a Ministry of Culture arrangement, and the project is under way for all universities to join.		
SOFTWARE	<p>Resources can be shared in two ways: The first is through emails between reference librarians of both universities. The email should specify the article, author, journal title, date, and page number. The second resource sharing method is a form available online that allows users to request document delivery while submitting the required information and choosing the university from a list.</p> <p>Some universities are using Share software, Google Docs, Library Management System.</p> <p>Not all local universities are included in this arrangement; it binds only universities that have signed a memorandum of understanding.</p>		
AGREEMENT	There is an arrangement between academic libraries. No public libraries are involved in interlibrary loans.		
FEE per request	<i>Data not available at the time of publication</i>		
DIRECTORY	Data can be found at the website of each individual university. There is no directory for all universities at the moment.		
INTERNATIONAL ILL	Current policy covers local resource sharing. There is no international arrangement in place.		

COUNTRY	UNITED KINGDOM	NETWORK	British Library on Demand (BLoD) https://www.bl.uk/on-demand https://www.bl.uk/on-demand/ill
UNION CATALOGUE	https://www.jisc.ac.uk/rd/projects/national-bibliographic-knowledgebase The Joint Information Systems Committee (Jisc) has created the UK's central cataloguing and holdings database, entitled the National Bibliographic Knowledgebase (NBK). The NBK includes catalogue data from more than 225 academic and specialist libraries, plus the British Library. The platform supports the management of library collections so that they are optimised for contemporary research and learning needs and, accordingly, underpins three new library hub services — discover , compare , and cataloguing .		
SOFTWARE	<p>UK shared services</p> Library Hub Discover: https://discover.libraryhub.jisc.ac.uk/faq/ National Bibliographic Knowledgebase (NBK): https://www.jisc.ac.uk/rd/projects/national-bibliographic-knowledgebase WHELP: https://whelf.ac.uk/category/whelf-shared-lms-2/ <p>UK higher education library management system vendors</p> Capita: https://www.capita-libraries.co.uk/ Ex Libris: https://www.exlibrisgroup.com/ Innovative Interfaces: https://www.iii.com/ ISOxford: https://isoxford.com/ Infor: https://www.infor.com/products/library-information-solutions OCLC: https://www.oclc.org/en/worldshare-management-services.html PTFS Europe: https://www.ptfs-europe.com/ SirsiDynix: https://www.sirsi-dynix.com/ <p>New technology platforms</p> RapidILL: https://exlibrisgroup.com/products/rapidill-interlibrary-loan/ <p>Current and emerging library technology in UK higher education</p> HELibTech study: https://helibtech.com <p>The British Library (BL)</p> The British Library currently offers an immediate download, digitise on demand, and loans service, via these platforms: <ul style="list-style-type: none"> ● British Library On Demand, to obtain contemporary research content, from physical or digital copies, directly to desktops/mobile devices ● Imaging Services, to obtain high-quality images and scans of the British Library's historic collections ● EThOS (the UK's national thesis service), to obtain physical or digital copies 		

	of doctoral theses
AGREEMENT (or Policy)	<p>UK higher education academic libraries tend to support each other within various geographical or university group consortia.</p> <p>The British Library has established and maintained lending policies and service level agreements, which tend to be universally adopted and form part of a “community” sharing arrangement. Therefore, the British Library either (1) provides resource discovery services directly to academic libraries or (2) supports independent sharing amongst university libraries by managing the lending/copying policies through the Directory of Library Codes. This is then used by universities to make requests between each other, with the British Library taking care of the administration and payments.</p> <p>The standard turnaround time for delivery of loans and surrogates scanned from British Library physical material is four days, and items supplied from digital stores are typically delivered within minutes.</p> <p>All exchanges take advantage of UK “exceptions in law,” which permit sharing by “library privilege” (for academic and/or personal use) without a copyright fee. This arrangement allows the copying of one journal article and one book chapter, or 5% of a book.</p>
FEE per request	There is a “cost recovery” fee attached that currently equates to £16.35 for a physical loan, £5.45 for a digital surrogate, or £10.15 for a scanned surrogate.
DIRECTORIES	<p>https://www.bl.uk/on-demand/britishlibrary/~/_media/f52b3f28381d49f3b415003af57b65c2.ashx</p> <p>The directory includes all academic and scientific institutions, medical libraries of hospitals, and public health-care institutions.</p>
INTERNATIONAL ILL	<i>Data not available at time of publication</i>

COUNTRY	UNITED STATES OF AMERICA	NETWORK	WorldShare ILL https://www.oclc.org/en/worldshare-ill.html OCLC launched the interlibrary loan platform now known as OCLC WorldShare ILL in 1979. WorldShare ILL is based in the United States with a global reach to more than 10,000 libraries in more than 50 countries. WorldShare ILL is built on the WorldCat database of more than 3 billion library holdings. Participating libraries may request copies of articles and book chapters to be delivered electronically in a matter of hours or the loan of physical items such as books, CDs, and DVDs shipped to their library for use. WorldShare ILL also includes an integrated ILL Fee Management (IFM) platform that allows libraries to recoup shipping fees based on local policies, though more than 3,000 libraries on the network have agreed to lend without payment through the Libraries Very Interested in Sharing (LVIS) programme.
UNION CATALOGUE	WorldCat https://www.oclc.org/en/worldcat/inside-worldcat.html WorldCat is a global union catalogue of library holdings with more than 517 million records and more than 3 billion holdings. WorldCat records include 483 languages, with 39% of WorldCat holdings representing English language resources. WorldShare ILL searches the WorldCat database to locate libraries that own a given resource. Searching and orders may be automated for ease of use and speed of delivery, or WorldShare ILL subscribers may perform searches and select lenders manually.		
SOFTWARE	WorldShare ILL WorldShare is a cloud-based software platform that gives libraries the ability to borrow and lend material on the WorldShare ILL network. It includes automation configurations through the Automated Request Manager (ARM); ILL Fee Management (IFM); Article Exchange digital delivery; and access to interlibrary loan programmes such as <i>Libraries Very Interested in Sharing</i> that loan to each other at no charge, and the Express digital delivery programme, where libraries committed to expedited delivery of articles and book chapters receive electronic files in 10 hours or less on average. WorldShare ILL is built on industry standards such as ISO 10160/10161, ISO 18626, NCIP, and z39.50, along with proprietary APIs for extensive integration and flexibility of use. Tipasa https://www.oclc.org/en/tipasa/resources.html Tipasa is a cloud-based management system with enhanced functionality such as copyright management and user-facing features for request management. ILLiad https://www.atlas-sys.com/illiad ILLiad is an ILL management system that interfaces seamlessly with WorldShare ILL and offers libraries additional tools and user features for managing resource sharing		

	operations.
AGREEMENT	<p>As a global resource sharing platform, WorldShare ILL incorporates best practices from the library community. Libraries are encouraged to abide by generally recognized standards such as <i>the Interlibrary Loan Code for the United States</i> (https://www.ala.org/rusa/guidelines/interlibrary) and <i>the IFLA International Resource Sharing and Document Delivery: Principals and Guidelines for Procedure</i> (https://www.ifla.org/wp-content/uploads/2019/05/assets/docdel/documents/international-lending-en.pdf). Libraries may also document their own policies and practices in the OCLC Policies Directory.</p> <p>The WorldShare ILL system and network allow libraries to work in peer groups and affinity groups seamlessly. Libraries in peer groups such as consortia, state, or national library affiliates prioritise group collections, policies, and service levels for their members. Libraries in affinity groups such as Express and LVIS organise around shared principles such as fast delivery and/or reciprocal borrowing policies. WorldShare ILL libraries are able to manage individual and group relationships in one place to maximise the value of a shared global platform.</p>
FEE per request	<i>Data not available at time of publication</i>
DIRECTORY	<p>OCLC Policies Directory https://illpolicies.oclc.org/dill-ui/SignIn.do</p> <p>This is where all WorldShare ILL members may manage resource sharing policies and document information about their library such as loan periods, charges, consortia affiliations, and contact information. The WorldShare ILL system leverages policies, including automatic deflections, maintained in the Policies Directory to further enhance and automate interlibrary borrowing.</p>
INTERNATIONAL ILL	<p>As a global platform with more than 10,000 libraries in more than 50 countries, WorldShare ILL seamlessly supports international borrowing and lending. The built-in ILL Fee Management simplifies international lending by eliminating the need for currency conversion, direct invoicing, or use of IFLA vouchers. Libraries make use of the Policies Directory to document any special considerations for international borrowing and lending, such as preferred address for international shipments and any additional charges associated with international shipments.</p>

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References

- Breeding, M. (2013). Resource Sharing in Libraries: Concepts, Products, Technologies, and Trends. *Library Technology Reports*, 49(1).
- Consortial Awareness Group. (2022). *The Library Consortium* [Infographic]. BCELN. [https://bceln.ca/sites/default/files/news/Library Consortium One Pager.pdf](https://bceln.ca/sites/default/files/news/Library%20Consortia%20One%20Pager.pdf)
- Litsey, R. (2017). *Resources Anytime, Anywhere. How Interlibrary Loan Becomes Resource Sharing*. Chandos Information Professional Series <https://www.sciencedirect.com/book/9780081019894/resources-anytime-anywhere#book-description>

Copyright and Licenses

Objective: *We provide a basis for understanding the impact on resource sharing systems from national and comparative international copyright laws and licensing agreements, and from their interaction. This chapter discusses the changing role of interlibrary loan services during and after the COVID-19 pandemic crisis in terms of copyright, licensing, and international agreements.*

Introduction

For librarians managing resource sharing, copyright can all too often be a source of uncertainty or risk — a factor that needs to be dealt with in order to carry out their missions without fear of sanction. Restrictions on what can be done with physical or digital works in library collections can lead to the rejection of resource sharing requests, or an obligation to pay fees.

Clearly, when resource sharing is working well, students and researchers will barely be aware of copyright. However, when it is impossible to fulfil a request, or when a library's budget for paying fees for such materials is exhausted, patrons risk coming face-to-face with the reality of the constraints that copyright places on libraries.

In order to carry out their work, librarians engaged in resource sharing therefore should have some level of familiarity with copyright law. This is valuable both in terms of being able to use all of the legal means that do exist in order to serve users, but also to engage in advocacy activities designed to change laws if that is what is needed.

Yet the interaction of copyright and resource sharing should not just be a source of frustration. Indeed, the practice of resource sharing is, arguably, right at the edge of current discussions around what should and should not be permitted under copyright law, and under what circumstances.

It is in the public interest to ensure that learners and researchers can access the books, journals, and materials they need, and it makes good economic sense for libraries to share materials. These factors run counter to the fear, on the part of rightsholders, that they are losing sales, or the sense that they should receive payment for activities that go beyond the use of a book within the walls of a library.

This chapter sets out the basics around copyright and its effect on resource sharing. It also looks both at general and specific provisions in copyright law — limitations and exceptions, or wider user rights — that can help libraries, and how these work in a digital world. Finally, it explores a key current question closely related to resource sharing: the practice of controlled digital lending and its legal status.

First, to provide context, we look at two key themes that are important to bear in mind when thinking about copyright and resource sharing:

Key theme 1: What is fair? As set out in more depth later in this chapter, the logic behind copyright is to provide a means for those putting time and effort into creating works to be able to recoup their investments, as well as to provide recognition for the creator.

While intellectual property is not explicitly recognized as a human right in the Universal Declaration of Human Rights (although it is in the European Charter, for example), the right to benefit from the fruits of work does feature. At the same time, the Universal Declaration does make clear that there is a right to share in scientific advances and their benefits, as well as the right to freedom of expression (including to receive and impart information).

The need, then, is to balance these rights to ensure that we come to a situation that is fair both for creators and users of works. This is implemented through copyright laws. So what is “fair” in the case of resource sharing?

As highlighted above, rightsholders will demand, at a minimum, that if the actions of a library in sharing resources result in the rightsholder selling fewer books or journals, then they should receive compensation.

They may also suggest that any use of a work over which they have rights should lead to payment. All money received helps pay for future investment.

Going to an extreme, they will suggest that if it is possible for just one library to buy a copy, and then supply the needs of all other libraries simply through resource sharing, the market would collapse.

On the other side of the argument, it is questionable that resource sharing necessarily results in lost sales. Given the cost of many scholarly materials, it is far more likely, arguably, that a library will simply have to deny the student or researcher’s purchase request, leading to a situation where no one benefits. Even in situations where articles or materials are available on a temporary basis, this is often on unfavourable terms (high prices and short access periods).

Secondly, it is important to underline the public interest benefits of what libraries are doing when they engage in resource sharing. While it is difficult to place an economic value on such things, it can be argued, for example, that the benefit to society of a researcher having access to a single chapter of a book or single article may be greater than the benefit to society of a rightsholder earning marginal extra income, once they have already been remunerated for the original sale of a work.

Indeed, the act of charging a fee, or placing a barrier, risks meaning that economic inequities start to appear in the ability of students and researchers to benefit from the possibilities of resource sharing. If a library is only able to provide access to resources that are free or come at a

low cost, rather than those that have a higher price tag, we risk deepening divides between the haves and have-nots.

Finally, it is important to bear in mind to what extent resource sharing is happening. There is a difference between intensive resource sharing and more ad hoc models. Many laws do indeed underline that exceptions should be limited to the latter, while more regular copying of articles or books should then lead to payments.

Key theme 2: Digital dilemmas. Resource sharing is also an area where the incompatibility of analogue laws and digital practices comes to the fore. The rise of new technologies opens up opportunities for more efficient provision of works among libraries, and that often runs counter to the letter of provisions set up at a time where the physical loaning of works was the primary means of sharing knowledge.

As set out in more detail below, digital uses often raise copyright issues that were not envisaged when working with analogue works. Even the act of reading a digital work on a device implies the creation of a local copy (covered by reproduction rights), while sharing with a colleague elsewhere may come into conflict with rights of communication to the public. As such, there is a need to ensure that relevant laws and regulations recognize these issues, and to make clear that resource sharing should be possible, regardless of the technology used for doing it.

In addition to the way in which digital uses are tackled (or not tackled) in law, there is the additional question of the relationship between copyright laws and contracts. Indeed, in many cases, digital resources are not “owned,” but rather accessed under licence, with a set of terms and conditions applying. In many cases, such licences are seen as coming before copyright law, given that they are supposed to represent a mutually agreed set of rules around how a work can be used.

This, however, ignores the fact that libraries often have little room to manoeuvre in deciding whether to accept a contract, and have minimal negotiating power over the contract terms. In effect, the rightsholder is frequently in a position to impose terms, and so can take away the possibility to share resources (or the ability to carry out other library missions, such as preservation and copying for research and education purposes). Therefore, to properly enable resource sharing in a digital age, there need to be legal provisions making such licence terms unenforceable.

Clearly, a concern among rightsholders is that whereas there is inevitably a limit on the harm that a single copy of a physical book can do to sales, a digital copy placed on the open internet has a much greater potential to damage demand. They will point to shadow libraries (discussed below) as a threat to their own business models and livelihoods.

In this context, rightsholders themselves may make use of extensive digital locks to try and stop this from happening. This cannot be acceptable for libraries when those digital locks prevent legitimate use, including resource sharing. Of course, at the same time, it also creates

responsibilities for libraries to ensure that they minimise the risk of copies “escaping” into the wild.

In summary, the interaction between copyright and resource sharing is both a “hot” and a “live” topic. For librarians, it is, as set out above, important to understand what is possible in order to fulfil their missions, and it is valuable to be able to reflect on the wider issues at stake in order to engage in reforms.

Copyright

Background and Historical Overview

Matthew Arnold (1822-1888), an English poet and cultural critic, once said in his acute and suggestive essay on copyright that “an author has no natural right to a property in his production” (as cited in Matthews, 1890). However, Brander Matthews (1890) discussed that there is an inner instinct in man that makes him want to possess what he produced. Those statements reveal how the philosophy of copyright evolved from the moral concept of not having the right to claim ownership of personal productions into the well-established concept of copyright that gives the author exclusive rights to benefit from their work morally and commercially. For many people around the world, copyright is a hard concept to understand and apply. This may be because of the complex nature of copyright and how it is applied to a diversity of materials and formats that include print, electronic, and audio-visual materials.

The concept of copyright was derived from the royal patent grants system, which allows some authors to exclusively publish materials for the sole purpose of raising revenue to the government and to give the government control over published materials (Fisher, 2021). The first recorded concept of copyright dates to 1710 when the Statute of Anne was enacted in England (“A brief history,” 2006).

The law established the concept of author ownership over their intellectual products and the terms of protection. It also established the concept of limited duration that was set then at 28 years before the work passes to the public domain. Later, the duration was altered in the 1886 Berne Convention, which suggested exclusive protection for 50 years after the death of the author. The Statute of Anne also required works to be registered and deposited in designated libraries. Following the Statute of Anne, other countries started to adopt similar versions of it, including Denmark (1741), the United States (1790), and France (1793) (Fisher, 2021).

However, the breakthrough of copyright on the international scale is the Berne Convention. “The Berne Convention was introduced to provide mutual recognition of copyright between nation states, and to promote the development of international standards for copyright protection” (“A brief history,” 2006). The Berne Convention initiated the idea of extending protection to unpublished works, and this step can only be done by removing the registration requirement and making copyright protection automatic once the work is created and becomes available in a tangible form. The core principle of the Berne Convention is the concept of

“national treatment” — “the requirement that each signatory country provides to citizens of other signatory countries the same rights it provides to its own citizens” (Fisher, 2021).

Before the Berne Convention, the Paris Agreement (1883) was created to protect industrial property, which includes patents, trademarks, industrial designs, utility models, service marks, trade names, geographical indications, and the repression of unfair competition (“Paris Convention,” 1883). Its main highlight was to ensure that those rights are respected internationally, which helped later in global trade.

Definition & Scope

Encyclopaedia Britannica defines copyright as “the exclusive, legally secured right to reproduce, distribute, and perform a literary, musical, dramatic, or artistic work” (Fisher, 2021). Copyright is a component of the broader umbrella called intellectual property (IP), which includes patents, trademarks, and other concepts of intellectual protections in some countries, while in many European countries patents and trademarks are considered industrial property.

The primary purpose of copyright is to protect literary, dramatic, and artistic works and to protect the author “against specific unauthorised uses of his work” (Fisher, 2021). It is important to note that copyright protects the tangible exhibition of the idea, not the idea itself. Patent law is the one concerned with protecting innovative ideas and inventions.

In countries that follow civil law regimes, copyright laws “tend toward the creators’ entitlement end of the spectrum” (Ginsburg, 2016). As an example, copyright law in France is entitled “droit d’auteur” which translates as “authors’ rights” in English with a clear focus on the moral rights of the author, and on the entitlement of the author to compensation for any use of their work, regardless of its impact on the market for the original.

However, in countries such as the United States of America that follow common law systems, it is clear that the law focuses on commercial and publishing rights, as the title “copyright” implies. “Common law systems generally situate at the social contract end” (Ginsburg, 2016), protecting the market for the original work, but typically taking a more relaxed approach to other uses that can be deemed “fair.”

In practice, both systems have the ultimate purpose of protecting the intellectual rights to the work and regulating its commercial use.

Copyright was created to protect the creative works of the human mind, thus making creativity a key requirement. The philosophy behind copyright was derived from the importance of creating a sense of ownership over a person’s intellectual labour. England’s Statute of Anne was the first to shift the rights from printers and publishers to the author of the work to reflect “the Enlightenment tenet that property derives from labour” (Ginsburg, 2016). This was the first time that intellectual creation was considered property and the outcome of labour, similar to the

product of any physical labour. The United States copyright law added the concept of creativity to encourage authors to produce original works.

Additionally, in many countries copyright protection has been extended to other subject matter, such as performances (for example, those of dancers or musicians), physical sound recordings, and broadcast signals.

General Protection Requirements

Most copyright laws state that to be protected, a work must fulfil two criteria: tangibility and originality. Since copyright law doesn't protect the idea itself but the expression of the idea (e.g., book, article, etc.), items should be available in a tangible form to be protected. In addition, originality or creativity is a key requirement for protection that is mentioned in many laws around the world. A work that does not encompass an intellectual output cannot be protected by copyright and therefore will be deemed out of copyright. A good example is a phone directory. A phone directory is simply a listing of names and phone numbers organised in alphabetical order. It doesn't contain any intellectual output, so it is considered out of copyright. There may, however, be "database" rights that seek to protect the time and effort that go into compiling databases, though such rights have arguably been little used.

Registration is not a requirement for copyright protection. The registration requirement was waived by the Berne Convention, meaning that copyright protection can be extended to unpublished works, and creators do not need to fulfil formalities in order to benefit from rights. As such, once a work is created, it is automatically protected by copyright, regardless of the intention of the author to exploit it commercially or otherwise. It is also important to understand that copyright is territorial, which means "the existence, content, and expiration of the copyright are subject to the law of the country in which the use or infringement occurs" ("Territorial application," n.d.). It should be noted that a key principle of the Berne Convention is that countries afford the same protection to rightsholders from other countries as they do to their own nationals.

Exclusivity & Exceptions

Fair Dealing:

Copyright is not unlimited in scope. Indeed, it is by definition bounded — a temporary monopoly, at least as far as economic rights are concerned — rather than a permanent property right. Most copyright laws have exceptions that allow users to benefit from a certain amount of copyrighted materials for non-commercial purposes such as personal or educational use. Examples of this concept are "fair use" in the United States, "fair dealing" in many Commonwealth countries, the "library privilege" in the United Kingdom, and clauses covering personal and educational use in other countries.

Fair dealing regulates the usage of copyrighted materials according to certain limits and without the permission of the copyright owner. The fair dealing doctrine allows the use of “copyright protected material for the purpose of research, private study, education, satire, parody, criticism, review or news reporting, provided that what you do with the work is ‘fair’” (Taylor, 2021). Yet, a user should follow some guidelines to deem whether the usage or the “dealing” is fair:

- 1. The purpose and the character:** The work should be used for a non-commercial purpose such as personal and educational needs. Any commercial use, even of a small part of the copyrighted material, is not allowed by the law. However, if the usage is for a non-commercial purpose, a user might benefit from a work without securing the permission of the copyright owner. Also, the character of the use is necessary to decide whether the dealing is fair. This includes whether the use is single or repetitive, whether it involves distribution, and, if so, to what extent.
- 2. The amount:** The amount of the used or copied material should be minimal. The law doesn't state a specific amount; yet, according to best practices, the copied amount should be no more than around 10% of the work.
- 3. The nature:** In the case of a published work that is available in the market for a fair price, the right decision is to buy the work instead of copying it. However, copying is deemed fair if the work is unpublished or an out-of-print material.
- 4. The effect:** To what extent is copying a copyrighted work causing harm to the commercial rights of the copyright holder? Copying from an out-of-print material will not deprive the copyright holder of commercial returns because the work is not available for sale; yet if the work is available in the market, copying will reduce the sales of the work, causing harm to the owner. In brief, a user should exercise good judgement to determine whether the dealing is fair. It is not necessary to satisfy all the requirements stated above, but it is important to understand that only non-commercial dealings in small amounts are considered fair.

First Sale (Exhaustion) Doctrine:

Another major concept in copyright is the first sale or exhaustion doctrine. The concept implies that “the copyright holder's right to control the distribution of their work goes away after the “first sale” of the work” (Quilter, n.d.). In other words, when a library or an individual buys a work, they have the right to lend their copy to others, resell it, or discard it. This is the main clause in the law that allows libraries to lend print materials from their collections.

However, the first sale doctrine cannot be extended to digital materials because they are treated as licensed, not owned. For example, when a user buys an eBook, they are actually buying access to the eBook according to a licence. Sending a copy of the book to others is considered distribution, and it implicates the reproduction right. Therefore, it is not protected by the first sale doctrine.

Out-of-Copyright Works and the Public Domain

Economic copyright terms are not perpetual. They have a life span that differs from one country to another. The Berne Convention advised that exclusive protection extends for 50 years after the death of the author (or the last author in the case of multiple authorship), which is the case in most countries that are members of the Berne Convention. The United States and European Union countries have set the copyright protection at 70 years after the death of the author.

Public domain refers to “creative materials that are not protected by intellectual property laws such as copyright, trademark, or patent law” (Stim, 2019). Works in the public domain can be freely used without permission from the author or their inheritors, and for any reason, including commercial uses, on the condition that the author is acknowledged.

Some countries have placed out-of-copyright works under the protection of the government, so a person should have permission from the government before using them, especially the ones that are related to the folklore and traditions of the country.

A work “falls into” the public domain for different reasons:

- When the copyright protection period expires;
- In some countries, governmental publications and legal provisions are born out of copyright;
- Folkloric works in some countries such as Lebanon are considered out of copyright;
- When an author deliberately chooses to donate their rights to the public;
- Works that are considered common property such as calendars, colours, height and weight charts, etc.;
- And for other reasons that differ from one law to another.

However, it is important to mention that in some countries moral rights are perpetual — they do not expire with time. Therefore, an author should be acknowledged and cited even if their commercial rights have expired.

Exceptions and Limitations for People with Disabilities

The Marrakesh Treaty’s main purpose was to establish humanitarian limitations and exceptions in copyright laws for the benefit of people with special needs, especially the blind and visually impaired. It was signed in Morocco on June 27, 2013 (“Marrakesh Treaty,” 2013), and is the most signed treaty of the World Intellectual Property Organization (WIPO). It is based on the concept of universal design in libraries, which provides equal access to information and promotes social inclusion for disabled people. The treaty tackled an important barrier, which is the ability of visually and print-impaired people to overcome the challenge of access to information and advance their right to equal access to education. The treaty recognized the

barriers in accessing print materials faced by the visually impaired and encouraged the creation and dissemination of works in accessible formats. In addition, the Marrakesh Treaty enhanced the legal framework on the international level to not only include exceptions and limitations in copyright law for visually and print-impaired people to access information, but also to diversify formats and make them widely accessible.

Copyright & Resource Sharing

Cooperation is a fundamental principle in libraries. No library can strive to serve its users relying only on its own collections. Therefore, resource sharing is an important service in libraries that helps to open other libraries' collections to users and provides an alternative to acquiring works that would only be used by a small number of people, making their cost unjustifiable. It also clearly helps in situations where works are unique or not available commercially.

The COVID-19 pandemic and the associated lockdowns have significantly highlighted the importance of resource sharing on an international scale, as users have lost access to print materials. However, there are always challenges in international borrowing, mainly related to copyright and licensing. Many initiatives were born to tackle this issue, and copyright holders have been more lenient about reducing copyright restrictions during lockdowns to facilitate sharing, at least in the first months of the pandemic.

Resource sharing relies mostly on copyright exceptions for educational or research purposes that are established in many laws and international agreements around the world. Many countries have exceptions that explicitly facilitate interlibrary loans and resource sharing; other countries don't, but still practice these rights under the broader concept of the law, such as creating exceptions for educational purposes or following the best practices that are performed by most libraries around the world.

Crucially, there may be a difference in laws between the loaning of materials (in a way that does not lead to new copies being made) and forms of sharing that involve copyright. The lending of material does not fall under international law and may often be allowed according to the principle of first sale or exhaustion (i.e., that once you own a copy of a work, you can do with that copy what you wish). In some countries, rightsholders do have the power to allow or forbid the lending of their works, but such rules often do not apply to academic or research libraries. As highlighted above, some countries may spell out explicit permissions to lend works.

The copying of works may raise more issues, given that the right to permit or forbid reproductions does feature in international copyright law. As such, an exception or other provision may be necessary.

For example, section 108(d) of the United States Copyright Act governs interlibrary loans. It states that a library can reproduce a small part of an item and send it to another library as long as it fulfils conditions that stress the personal and educational use of the copied material and that a copyright warning should be placed on the item before sending. This is mainly facilitated by the

first sale doctrine codified in section 109 of the law that provides to the buyer of a copyrighted copy of a work the right to sell, dispose, or display the copy. However, this cannot be applied to electronic materials because they are governed by licences. In addition, the CONTU guidelines, drafted in 1976 to govern interlibrary lending in the United States, have established some constraints related to interlibrary loans and resource sharing. The CONTU guidelines were intended to define how much sharing is allowed under the exceptions provided by the law. It created the “rule of five,” which limits the number of articles shared from the same journal to five in a calendar year. And it limits libraries to six requests per year per title for copies of non-periodical materials such as books during the entire term of copyright of that work.

In addition, it is important to highlight the roles and responsibilities of both the borrowing and lending libraries to avoid possible copyright infringement. It is certainly a shared responsibility to abide by the terms of the law and to ensure the appropriate use of copied material.

Borrowing library:

- Should make sure to abide by the fair dealing or personal and educational use exceptions established in the local copyright law;
- Should observe national guidelines and follow any relevant national rules or best practices when fulfilling article requests;
- Should include a statement to notify the end user that the material should be used for educational and personal purposes only and that any commercial dealing will make the user liable for copyright infringement;
- Should send the material in a way that doesn’t encourage further distribution, such as by sharing print copies or using password-protected cloud sharing.

Lending library:

- Should include a copyright compliance statement to inform the borrowing library that the material is not to be used in excess of fair use;
- Shouldn’t use documents available illegally on the internet from shadow libraries that may put the institution in a delinquent situation;
- Should not store scanned and electronic copies and use them for further requests;
- Should track requests and pay any required copyright royalties.

Controlled Digital Lending: The Case of the Internet Archive’s National Emergency Library

Controlled digital lending has emerged as a recent flashpoint between librarians, authors, and publishers in the United States. While the basic principles of controlled digital lending (or CDL) were articulated by Georgetown law professor Michelle Wu about a decade ago, the term CDL

did not enter the mainstream library discourse until the publication of *A White Paper on Controlled Digital Lending of Library Books* by David Hansen and Kyle Courtney in 2018. In this white paper, the authors identify the problem of 20th-century books — many of which are still within copyright but unavailable in digital form from their publishers — as a compelling reason to consider controlled digital lending and lay out the basic legal framework within U.S. copyright law that makes CDL possible. Hansen and Courtney argue that both the first sale doctrine (which also allows libraries to lend physical books) and fair use allow for CDL as a potential remedy that provides digital access to physical books that are otherwise unavailable electronically.

CDL is not necessarily only possible in countries that have incorporated fair use into their law. In Canada, there are efforts to draw on the fair dealing exception to enable CDL, at least in the case of out-of-commerce works. In Europe, the judgement in the case of *Vereniging Openbare Bibliotheken v. Stichting Leenrecht* (C-174/15) leaves open the question of whether lending a digital copy of a physical book is possible.

Authors and publishers have had mixed reactions to the idea of controlled digital lending. The Authors Guild, which famously opposed the mass digitization of library books by Google with a lawsuit in 2005, criticises the legal rationale for CDL as well, claiming that a legal case involving the reselling of a digital music file (*Capitol Records v. ReDigi*) should apply to what they call the “unauthorised” resale or lending of eBooks. In addition to this, the Authors Guild also directly made accusations of copyright infringement against several organisations that had embraced the practice of controlled digital lending — most notable among these practitioners was the Internet Archive and its Open Library.

Founded in 1996 by Brewster Kahle in San Francisco, the Internet Archive (IA) is a non-profit American digital library whose stated mission is “universal access to all knowledge.” When it was first established, the IA was intended to be a digital archive of the World Wide Web, but as the archive grew, it began to add other materials to its collections, including software applications, games, music, movies, videos, and books. The IA collects a variety of different types of eBooks, including titles that are in the public domain as well as digital copies of books that are in print and protected by copyright. While some of these copies were uploaded by archive users, the IA also digitises an estimated 1,000 books per day through a global network of scanning centres. This Open Library makes millions of out-of-copyright e-books available to the public and allows registered users to borrow digital copies of titles that are still within copyright for two weeks at a time via controlled digital lending, by which only one user can access the eBook at a time.

On March 24, 2020, during the first few weeks of the COVID-19 pandemic, the IA announced that it would temporarily suspend the one-user lending restriction for copyrighted eBooks as part of what it called its National Emergency Library. It cited the “unprecedented global and immediate need for access to reading and research material” caused by the sudden closure of libraries around the world as its justification for opening access to its in-copyright collections. Although the National Emergency Library allowed for authors to submit opt-out requests for their books, the archive’s decision to make millions of copyrighted eBooks available angered many authors and publishers, leading to a lawsuit filed in June 2020 by four major book

publishers against the IA. The IA closed the National Emergency Library on June 16, 2020 — two weeks before it was originally scheduled to shut down.

The National Emergency Library proved to be a controversial topic among librarians, surfacing a range of emotions, from support to anger, towards authors and publishers and exposing many incorrect assumptions about how U.S. copyright law works with respect to eBooks and libraries. Many librarians felt that not only did the extraordinary circumstances of the pandemic justify the IA's actions, but publishers had helped foster the present vulnerability by not working harder to make eBooks more accessible and affordable. Other librarians decried the move, defending such bestselling authors as Neil Gaiman when they publicly excoriated the archive for making their books publicly available without their permission. Some resource sharing librarians actively welcomed the National Emergency Library as a viable method of obtaining information for their patrons during the first wave of library shutdowns, while others adopted a more cautious approach, mindful of the unsettled legal questions posed by the resource.

The IA lawsuit is still pending as of the writing of this chapter. Law professor and former Stanford research fellow Argyri Panezi argues that the case “presents two important, but separate questions related to the electronic access to library works; first, it raises questions around the legal practice of digital lending, and second, it asks whether emergency use of copyrighted material might be fair use.” Whatever the outcome, it is ironic that, at least in the United States, the legal question of controlled digital lending currently depends on the outcome of a lawsuit prompted by the uncontrolled digital lending of copyrighted eBooks.

Contracts and Licensing

Definition and Historical Background

Libraries have been commercially licensing digital content since the 1990s, with many libraries now paying more money annually in licensing fees than they spend to acquire physical content. Commercially licensed content is governed by a licence, since the library is leasing the content instead of owning it.

When a library owns a physical item, the use of the item is only governed by the relevant jurisdictional laws, such as copyright. Thus, the laws and rules around the use of a library's physical collection tend to be the same for each item. But with licensed content, the rules for use are different for each licence.

Consequently, the licensing of content has significant consequences for the ability to provide standard library services such as resource sharing (Cross, 2012). Why? Because many library practices, such as resource sharing, are predicated on the library owning the material it is lending or from which it is making a copy. But libraries don't usually own the eBooks and e-journals to which they subscribe. Rather, they lease them, possibly in perpetuity, and the use is governed by the associated licence. The licence sets out how the library can share the digital content via interlibrary loan, how library patrons can use the digital content, how it can be accessed, etc.

What is a licence? A licence is a contract, and when a library licences content, it enters into a contractual arrangement with the vendor (the licensor) (Bamman et al., 2021). The contract allows the vendor and other copyright owners to reorder the use of the material according to private contracts and contract law and away from the public law of copyright (Di Valentino, 2014). Licences will often contain provisions that restrict how much, and for what purposes, content can be copied. For example, copying by a student for research may be allowed, but copying for interlibrary loan may not be allowed. In addition, the resource itself may come with technological protection measures that limit how many pages can be printed or downloaded. Most copyright legislation prohibits the circumventing of a technological protection measure, even if the circumvention would be for an allowable purpose. So, as we can see, many library licences are agreements made by the library “to not take advantage of copyright exceptions for the duration of the contract” (Di Valentino, 2014).

Even though licensed electronic resources have been used in libraries for three decades, most library users and library staff are not aware that the use of digital resources is governed in a fundamentally different way than a physical item.

Contracts are only valid when both parties agree to them, and a fundamental aspect of a contract is the opportunity to negotiate. Therefore, it is important for librarians to try to negotiate better terms in the licences they agree to. For example, if resource sharing is covered by your national copyright act, you should try to include a licence clause that states that nothing in the licence overrides your copyright act. Or try to ensure that the licence allows for at least some form of interlibrary loan. When libraries purchase licensed material where the licence prohibits interlibrary loan, they are contributing to the diminishment of the library ethic. Such licences turn libraries into silos of unshareable information and contribute to inequality between citizens and nations. Resource sharing is fundamental to libraries, and therefore librarians must do their best to ensure that licences for electronic resources allow for interlibrary loan.

Notably, some countries, such as the United Kingdom, Singapore, and Ireland, have laws that disallow contract override of copyright exceptions. In these countries, those parts of a licence that restrict the exercise of copyright exceptions are not enforceable. Additionally, library associations in other countries are recommending contract override legislation in their countries (Canadian Federation of Library Associations, 2018; Australia Libraries Copyright Committee, 2016).

Due to the variety of licensing terms for different resources, it is important for libraries to try their best to make licensed information available to resource sharing staff. In particular, the interlibrary loan terms should be made available. These terms can vary, with some more common terms being: prohibition of interlibrary loan; requirements that document delivery must be in paper format; and only a single chapter of an eBook may be sent on interlibrary loan, not the entire eBook.

The proliferation of licences in libraries across the world may cause some to wonder how, or if, a licensor can enforce their licence terms. As described earlier, some countries have legislation that

voids licence terms that restrict the exercise of copyright exceptions. IFLA has a helpful document that provides information about protecting exceptions against contract override and the status of contract override provisions in many countries. Some legal scholars, including Ariel Katz and Lisa Di Valentino in Canada, question whether a licence can truly override the copyright act of a nation. These scholars say that in those countries where the courts have framed copyright exceptions as *user rights*, that a contract cannot abrogate those rights. For example, Katz has written that "... courts will not necessarily uphold any private re-ordering of the respective legal entitlements of copyright owners and users" (Katz, 2016). This reasoning suggests that a licence that forbids all interlibrary loan may not be enforceable as it unduly interferes with the normal, accepted practices of libraries (Katz, 2016).

However, in the absence of clear case law, such conclusions are strictly speculative. Another view is that licences are business arrangements between parties that are meant to ensure that a party does not do anything to overtly compromise the licence terms at the expense of the other party; consequently, occasional minor licence breaches by the licensee are expected by the licensor. This type of pragmatic advice is again speculative because most licensors will not openly admit that they expect licensees to breach licence terms.

A proven breach of a licence by the licensee will usually allow the licensor to cancel the contract outright, or to suspend access until they have received sufficient assurances that the breach will not happen again. Consequently, without clear legal guidance to the contrary, it is incumbent upon resource sharing departments to follow — as best they can — the interlibrary loan provisions in licences for electronic resources.

Licensing and Open Access

Licensing is not only for commercial items. There are also licences that govern the reuse of material to allow for copying and reuse beyond the usual copyright exceptions. These licences are generally called open licences, and they encourage the free access to, and sharing of, material without first obtaining the permission of the copyright holder (Bamman et al., 2021). The most common type of open licence is the Creative Commons suite of licences; and for resource sharing purposes, the main type of publication that uses open licences is open access (Bamman et al., 2021).

Open access as a movement and publishing model grew out of scholars' desire to make scholarly research available to all readers, and not just to those fortunate enough to be at institutions that can afford to subscribe to expensive scholarly journals. Open access is based on the idea that "knowledge is and ought to be a public good" (Suber, 2016), and in general open access is more prevalent in the science and medical fields than in the arts and humanities. Although many publications may use the term open access, the standard definition of open access means that the work is both free to read and can be reused and shared with greater flexibility than is available under standard copyright exceptions (Budapest Open Access Initiative).

Open access makes it easier for the interlibrary loans divisions to supply, or find and share, a needed article, and thus open access resources are valuable for resource sharing purposes. Many patrons request open access publications via interlibrary loan even though they could access them for free online, and it is hypothesised that patrons likely do not think to search to see if the publication is an open access publication (Hayman, 2016). Likely the patron assumes that since their library does not own the journal, they need to use interlibrary loan services to get a copy of the desired publication.

Even large commercial scholarly publishers use the OA model, both for individual articles and for entire journals. However, these particular publishers often require the author(s) to pay an article processing fee ranging between \$1,000 and \$3,000 USD. So while these particular journal articles are available to all, the ability to publish in these journals depends on the ability to pay these fees as well as the scholarly quality of the article. However, most open access publishers do not require the payment of article processing fees. Most open access publications allow the author to retain copyright and simply require that the author agree to licence the published article under a Creative Commons licence.

Creative Commons Licensing

Creative Commons is the most common open licence in use and is the licence most used for open access publications. Creative Commons (CC) licences are developed and maintained by the non-profit Creative Commons organisation (Creative Commons, 2022b). Creative Commons also works with major institutions, governments, and others to help them create and adopt open licensing and to ensure that CC licences are used appropriately. Copyright underpins CC licences, since only the copyright holder can apply a CC licence to a work (Creative Commons, 2022a). Thus, an open licence is simply a different type of licence from a commercial licence, but is still a licence, as the consent of a copyright owner is always needed when applying a licence to a work. Six different types of CC licences are available, and they range in degrees of openness. The most open is the CC-BY licence, which allows for any type of reuse as long as attribution is given to the original creator of the work, whereas others are more restrictive as they might limit the creation of derivative works, or may restrict uses of the openly licensed work to non-commercial use.

Shadow Libraries

As just stated, only the copyright holder can authorise a licence to be applied to their work. Therefore, large collections of copyrighted works that are made available without the copyright holder's authorisation cannot be considered openly licensed. Rather, they are collections of illicitly obtained materials and are known as shadow libraries. The most famous shadow library at the current time is Sci-Hub (Gardner et al., 2017). Shadow libraries usually harvest their content by using pooled university credentials to access subscription content, then adding this content to their illicit collection (Gardner et al., 2017). Since a shadow library does not have a licence to make available others' copyrighted content, it is infringing on copyright. As such, resource sharing departments should refrain from using shadow libraries as a source for fulfilling requests

(Harrison et al., 2018). Interestingly, an analysis of resource sharing and shadow library usage in various cities in Canada and the United States showed that shadow libraries likely do not negatively impact the use of resource sharing services (Gardner et al., 2017).

However, other researchers and librarians insist that there is a causal relationship between shadow libraries and the decline in the use of resource sharing services. For example, Kehnemuyi and Larsen, when discussing how shadow libraries illicitly use resource sharing services to obtain content, hypothesised that the use of shadow libraries by researchers and students may contribute to the decline in the utilisation of resource sharing services. The authors also mention other recent factors that may be contributing to the decline such as truly open access publications, pre-print servers and the perceived slowness of resource sharing services in supplying documents (Kehenemuyi & Larsen, 2019).

Shadow libraries such as Sci-Hub must not be confused with open access. As stated earlier, open access is a movement where the author and rightsholder make a conscious decision to make their research openly available for use. In contrast, shadow libraries infringe on the law by violating copyright legislation, by abusing institutional IT policies, and by facilitating the violation of digital licensing contracts (González-Solar & Fernández-Marcial, 2019).

Although licences require the consent of the copyright owner in order to be applied to a work, the licence itself can either restrict or expand the rights that users are given under their respective national copyright laws. The main thing to remember is that when a work is made available under a licence, the resource sharing staff need to do their best to always comply with the licence terms, whether the licence is a commercial licence or an open licence.

Case Studies

United Kingdom (British Library)

British Library Copyright Update

Prepared by:

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29 Sept 2021

The legislation (the Copyright, Designs & Patents Act 1988 as amended) provides a number of routes to supplying items, or copies of items, to other libraries. The main ones of interest are:

- Interlibrary lending: Section 40A provides for public libraries to lend copies of works to the public, subject to the Public Lending Right (PLR) legislation. It also provides a route for non-profit libraries or archives which are not a “public library” to lend copies (Section 40A(2)). This is of most interest to the British Library, as it allows us to lend items in our collection. As a policy decision, we lend items only to other institutions, and only more modern works.
- Library privilege: Library privilege is a term commonly used, but not mentioned in the legislation, for Sections 42A & 43, which allow libraries to supply copies of excerpts of works (in the case of published works) or entire works (in the case of unpublished items) for non-commercial research or private study provided a declaration is signed. The law is silent on whether these can be supplied outside of the UK, so we have made a policy decision to fulfil requests of this nature to any part of the world excluding the United States.
- Parliamentary and judicial proceedings (Section 45), accessible copies for disabled persons (Sections 31A, 31B, and 31BA), replacement copies (Section 42): These all allow us to provide copies for very specific uses. As with the library privilege copies, the legislation is silent on supplying copies outside of the UK, so we will fulfil requests internationally for these.

For requests which don't fall under any of these, then we have a non-legislative route available in our document supply service. This functions through contractual agreements with publishers or the collecting society that allow us to provide copies of a work in exchange for a fee, which is then passed back to the publisher. The copy the requestor receives can be used in a much broader manner than those above and adds a copy of the work to the requestor's collection that can be used as if it had been purchased outright.

Until 2010, the British Library also offered the library privilege service to international non-commercial customers. However, this was withdrawn following concerns expressed by the publisher community. A licensed service to replace this with reduced copyright fees was trialled but was unsuccessful, as the service was too manual and did not have the funding to invest in a

modern (technology-enabled) user experience. Following a review around risk and international approaches, it is planned to reintroduce the library privilege service to all countries except the United States.

Historically the British Library supplied copies from the library's purchased collection either to commercial users (with a copyright fee) or to non-commercial users via the "library privilege" option (without a copyright fee). However, in recent years, pressures on the acquisitions budget mean that the service is increasingly reliant on licensed electronic journals for document supply (downloading the copy from the publisher website) for subsequent resale to the end user. This has helped alleviate the impact of acquiring less content to commercial customers (who still pay the copyright fee) and has enabled the library to introduce a lower fee for articles, as they are provided from electronic resources and therefore less costly. Most publishers, though, are reluctant to allow licensed content for library privilege, as it undercuts their business models and offers no copyright fee in return.

Interlibrary lending has been around for hundreds of years and is built upon the principle that everyone should be able to access printed collections in order to study, research, and enjoy the written word. Given that one library cannot own everything, for interlending to work, a spirit of sharing and community is required to make the provision "for everyone." Accordingly, many in the UK think that for ILL, we should go back to first principles and re-create a "community-owned" sharing platform that underpins these basic principles:

- Working collaboratively, as a community
- Being open to sharing, and in doing so ...
- Leveraging the uniqueness of individual collections
- That libraries are for anyone and everyone

The research landscape is changing for lots of reasons: more open access, the need for data, the ability to manipulate with digital technologies, changing user expectations, and the sheer vast amount of content that's out there. In the wake of the pandemic, it is important to collaborate and share across territorial boundaries and not be impacted by commercial obstacles. This then will require a close dialogue with publishers to ensure they can participate in this new way of working.

Qatar (Qatar National Library)

Prepared by:

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04 Oct 2021

Law No. 7 of 2002 on the Protection of Copyright and Neighbouring Rights 7 / 2002 is the Qatari law that handles Qatari works. This law has been in place since 2002 and has not been updated since.

As an institution operating in the State of Qatar, services of the Qatar National Library (the library) are governed principally by Law No. 7 of 2002 on the Protection of Copyright and Neighbouring Rights. All library services are conducted in a manner consistent with applicable national and international copyright law, always respecting the rights and interests of copyright owners, while also exercising rights and opportunities allowed to libraries and the public.

The collections at the library are composed of massive quantities of copyrighted works in print and digital form; the copying, sharing, and other uses of many materials in QNL collections are governed by copyright law. Under the Berne Convention and other multinational treaties, works that were originally created or published in most other countries are also subject to copyright protection. For most works, copyrights last for the remainder of the life of the author, plus 50 calendar years.

Qatar National Library manages closely the proper use of works that have copyright protection, such as:

1. Works of Qatari authors published within or outside the state
2. Works that are published for the first time inside the state
3. Works that are published for the first time in another state and then published in Qatar within 30 days of their first publication date, irrespective of the nationality or place of residence of their authors
4. Audio-visual works, the producer of which has their headquarters or place of residence in Qatar
5. Architectural works constructed in Qatar, or any other artistic work incorporated in a building, or any other construction situated in Qatar.

The provisions of this law shall also apply to works protected by an international agreement or a court in which Qatar is a party, and in accordance with the provisions of such agreement or court.

Cases that have hindered the accessibility of resources:

- COVID lockdown put a focus on electronic resources such as the public library and research subscriptions, but we were limited with resource sharing and document supply due to limitations in copyright law that allow only portions of a work to be scanned and provided upon demand
- During the first months of the pandemic in 2020, the library closed its doors to visitors. While this led to increased usage of electronic resources, the library was limited in fulfilling user requests for copies of printed materials. Besides access to physical documents and digitization, the library can only reproduce articles and other short works or extracts for teaching, research, and education. This meant that library users were not able to access all the information that they needed. Although Qatar is a signatory to the Marrakesh Treaty, which creates an exception to copyright allowing any book to be copied in Braille for visually impaired users, the Qatar copyright law has not been updated yet to reflect this change
- QNL signed an agreement with the World Intellectual Property Organisation to become part of the Accessible Books Consortium, but we are limited in what we can do with cross-border transfers as we await copyright law updates to reflect the Marrakesh Treaty
- Qatar laws do not have fair use or fair dealing provisions and are limited to a specific range of exceptions such as single copies for patrons (Article 21(2)), digital preservation and creation of replacement copies (Article 21(2)), and serving people with disabilities. Therefore, during COVID we had to explore channels to deliver book readings online other than our social media platforms, which required publisher approvals
- Qatar law has exceptions for education, but the law does not reflect the advancements in online/distance education. Therefore, it is essential to ensure access and use rights through licensing. For access requirements such as text and data mining, the QNL Electronic Resource Management (ERM) section needs to put them in the licence.

QNL initiatives to counter the limitations:

- When QNL works with major publishers, the ERM team requires that “nothing in the agreement goes against the copyright.”
- QNL has several “Read and Publish” agreements with major publishers. This is transforming Qatar-based research into open access. This means it will allow access to articles from Qatar freely without any dependence on publishers’ terms or copyright.

German Copyright

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1. Legal basis / German copyright

The Copyright Knowledge Society Act (UrhWissG) came into force in Germany on 01 March 2018. The previous legislation was often very detailed and spread across several different laws. In addition, digitisation and networked working have changed the possibilities of creating, distributing, and using copyrighted content. For interlibrary loan and document delivery in Germany, the UrhWissG not only brings advantages and clear guidelines, but also restrictions compared to the previous rules. Particularly in an international context, these rules give rise to questions and incomprehension. This is probably due to the fact that the German Copyright Act has little in common with the guidelines on international interlibrary loans. The most important points for interlibrary lending and document delivery within Germany are regulated in §60e (5) UrhG. Among them:

- Individual request for non-commercial purposes
- Copies of up to 10% of a published work
- Copies of individual articles from scientific journals
- No limitation to certain types of publication originals (print or digital)
- No restriction to certain delivery routes
- Appropriate individual remuneration by a collecting society (cf. §60h Abs.3-4 UrhG)

The UrhG refers in the context of copy delivery to German domestic interlibrary loans. International lending is not dealt with separately. However, the regulations still apply to international interlibrary loans with German libraries, as they are binding for German libraries. Unlike in other countries, in Germany the lending library is responsible for the payment of the fees to the collecting society.

1.1 Individual request for non-commercial purposes

The legally permitted use is basically limited to non-commercial use. This must be proven by the user in the form of a self-disclosure. In the national context, this is done across the library networks by a checkbox, which the user must acknowledge for each order transaction. The library has no active obligation to verify. In the international context, the German lending library should check in advance whether commercial orders can be placed via the international ordering system and, if necessary, verify with the user that the request serves non-commercial purposes by filling in a form.

1.2 Scope limitation to 10% of a monograph

The delivery of copies from monographs is clearly regulated by law and limited to 10%. Previous legislation allowed the delivery of a “small part” as a copy. In common practice, this small part corresponded to 15%. Since the specified 10% must be strictly enforced by the libraries, this means a labour-intensive effort for the libraries. This check cannot be done automatically by the ordering system.

In addition, the lending library should ensure that it does not process several consecutive requests from the same user, as it could mean that they exceed the legally permitted 10% portion of a work. As an alternative, of course, there is book lending, but this, especially in an international context, has the disadvantage of lengthy and expensive transport.

1.3 Article requests from scientific journals

A major change is the restriction of the delivery of copies of scientific journals. Newspapers and journals for the general public may no longer be used for the delivery of copies. However, the law does not contain a definition of journals for the general public in comparison to professional and scientific journals. The blacklist on the SUBITO document delivery service and the categorization of professional journals on buchhandel.de serve as guides for libraries.

Public magazines are aimed at a broad audience and are preferably read in leisure time. In comparison, scientific journals are aimed at a specialised audience and contain subject-related articles. In practice, the differentiation is sometimes difficult and must be made individually by each library. There is currently no uniform national reference system for differentiation between professional journals and public magazines.

1.4 Publication form and delivery options

The elimination of restrictions on the publication form (print or digital) and the acceptance of electronic transmission to the user as the standard delivery option are the most far-reaching changes brought by §60e UrhG compared with the previous §53a.

The examination of appropriate offers from publishers and the mandatory use of graphic files have been eliminated. However, the practical implementation of these positive changes is only possible to a small extent. The unrestricted use of e-resources applies only to licence agreements concluded after March 1, 2018. Moreover, electronic transmission to users is not part of the agreements with collecting societies and therefore cannot yet be implemented. During contract negotiations with the VG Wort on the new amount of the fee for the individual case remuneration, no agreement could be reached that included electronic transmission.

2. German ILL and SUBITO

The German interlibrary loan system consists of several standardised interlibrary loan systems which cooperate across different networks. The basis for this is the National Interlibrary Loan

Regulation. Interlibrary loan is mainly used to supply research and therefore mainly refers to scientific literature.

Orders via SUBITO are more expensive than national interlibrary loans. The libraries serve different target groups via SUBITO than via national interlibrary loan.

2.1 International interlibrary loan

Conventional international interlibrary loan requests can be submitted directly to the lending library by website form, email, fax, or post. The copy or the loan of the book will be sent by post. The accounting is done via the standardised IFLA Voucher Scheme. This form of international interlibrary loan is the most common procedure and can be used for orders from most German libraries.

2.2 SUBITO library service

In addition to the interlibrary loan system, SUBITO e.V. is a cooperative direct delivery service among libraries from Germany, Austria, and Switzerland. In contrast to (inter-)national interlibrary loans, this service allows direct delivery to users and requests from commercial users and private persons.

International, publicly financed libraries can use the SUBITO library service to order books and articles from German libraries. This applies to all libraries worldwide except for the United States and Great Britain. At SUBITO, research and ordering take place in one system. At SUBITO, unlike conventional interlibrary loan, copies from licensed journals can be sent by email using the digital rights management system.

The services offered (delivery of copies, lending) and the associated prices are determined individually by the supplying libraries. Note that not all SUBITO supplier libraries offer the lending of books. The average prices in the SUBITO library service are higher than the voucher costs in conventional international interlibrary loan. For this purpose, billing takes place centrally via the SUBITO office in the form of collective invoices.

2.3 WorldShare ILL

Orders via OCLC WorldShare ILL are a good alternative for libraries from the United States and Great Britain. Please note, however, that only a few libraries in Germany participate actively in the WorldShare ILL interlibrary loan system, whereas it can be regarded as the standard interlibrary loan system of the United States.

Several German supplier libraries use ImageWare's MyBib electronic reading room as a complement to OCLC's WorldShare ILL interlibrary loan system to provide digital copies of articles. The requesting libraries can call up and print the ordered article via a link in the electronic reading room. There is no direct delivery as PDF or to the user. The electronic reading

room enables a copyright-compliant compromise between modern, technical possibilities and the copyright requirements for German libraries.

Spanish Copyright Law

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10 Aug 2021

The Spanish law on copyright does not mention expressly the interlibrary loan and the document supply among libraries. It does include a general exception for loans, if they are made in certain institutions, including publicly owned libraries, or libraries that belong to cultural, scientific or educational institutions without profit-making, or that are integrated into the Spanish educational system.

The current copyright law in Spain is in the consolidated wording of the Law on Intellectual Property, approved by Royal Legislative Decree 1/1996 of April 12, 1996.

Article 37 states the exception to copyright for libraries, archives, etc.: Libraries don't need the authorization of the copyright owner to copy and lend materials if it is not for profit, and if the purpose is exclusively for researching or conservation.

Article 3 of the Royal Decree 624/2014, of July 18, 2014, develops the right of remuneration to authors for the loan of their works made in certain establishments accessible to the public. It establishes that loans between libraries do not generate remuneration, as libraries are beneficiaries of the public loan exception.

ALPE, Italian cooperative system for checking ILL permitted uses in e-resource licences

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ALPE (Archivio Licenze dei Periodici Elettronici / e-journals licence database) is an Italian cooperative project aiming to improve the understanding of the issues raised by interlibrary loan clauses of electronic resources licence agreements.

ALPE is designed to collect all clauses of the licence agreements subscribed to by the participating universities and research institutes, with the purpose of building a national archive open to the public.

ALPE is integrated with NILDE — the Italian service for resource sharing — which allows librarians to implement the correct policies for ILL services, leads to the explanation and clarification of the clauses, and at the same time guarantees publishers fulfilment of the subscribed agreements.

Introduction

The massive growth in e-journal collections and the increasing use of electronic/digital interlibrary loan systems such as NILDE highlighted the need to clarify the relationship between e-journal licence conditions and resource sharing.

The problem arises when staff members handling ILL services have to manage the service from different providers and publishers and have to correctly identify the right licence for the specific individual article that they are lending in the shortest possible time. Another relevant problem arises when staff members handling ILL services have to understand the legal language of the licence. Licence wording is technical and sometimes vague with respect to interlibrary loans. In a resource sharing network such as the NILDE community⁹, this means that the licensing rights of all titles need to be communicated to the ILL staff of more than 900 libraries.

The challenge is to share the e-resource licence with staff in a simplified format that educates them on how not to infringe on the permitted uses for interlibrary loan. The ALPE database and the integrated NILDE widget allows this sharing and allows the ILL librarian to search, view,

⁹ <https://nildeworld.bo.cnr.it/en>

and choose the right licence and then to automatically apply its conditions in the same interface while fulfilling the lending request.

A brief history of ALPE

ALPE is a national archive of ILL clauses, extracted from standard and negotiated licences, created to manage, to publicly share, and to check the permitted uses of e-resources for ILL and document supply.

The ALPE project started in 2012 when a national working group was formed by volunteers. The aim of the project is to create a national archive of clauses with a standardised descriptions in order to minimise the risk of subjective interpretation of the licences by librarians and to increase usability. It is a framework developed to help ILL librarians to comply with the licences during the ILL activity.

The working group started with an analysis of the ILL clauses in contracts negotiated by Italian consortia between 2005 and 2012 (about 60 licences), at the same time analysing a local electronic resource management system developed independently by a university. Although the maintenance and update of the information is very difficult, the analysis highlighted the need for a collective and cooperative effort. (Balbi, 2013, Okamoto, 2012; Wiley, 2004; Blake et al., 2013). The ALPE group worked in three subgroups coordinated by CNR Bologna Research Library.

The first group had the task of creating and assessing a shared schema able to represent the content of ILL clauses found in licence agreements. A vocabulary of terms found in licences also had to be shared. In general, there is no common language to describe permitted uses of ILL. The language used is often juridical and technical and is not so easy for non-legal professionals (Lamoreux and Stemper, 2011).

The second subgroup had a mandate of filling the database with the licence agreements of the “big-deals” contracts subscribed to by consortia. In this case, we refer to *negotiated licences*, which are discussed and subscribed to by libraries, consortia or institutions. Negotiated licences may be multi-year.

The third subgroup worked to fill the database with the publisher’s *standard licence* agreements. We consider *standard licences* the automatic licences attached to a subscription to digital content. Usually, terms and conditions can be found on the website of the publisher or of the content provider. This kind of licence usually is valid for a year. This group updates the database annually. It also populates the database if there is no specific information about ILL service on the website of the publisher. In those cases, ALPE’s answer is that the document supply service is not directly allowed or is forbidden.

ALPE is a growing organism that started as a project and has become a vital asset to NILDE's librarians. The design and development of the system was directly inspired by librarians who expressed their practical needs. Now it is a fundamental tool that is fully integrated into the ILL workflow for all NILDE librarians.

How we can work in a large group: methodology, working group, a common language

The ALPE database is steadily updated by the librarians of the universities and research organisations that adhere to NILDE and ALPE. There are three different profiles enabled to fill the database with the licences:

- The librarian with the account of organisation operator. This person inserts the licences negotiated by their institution and these are only effective for the libraries of the organisation.
- The librarian with the account of consortium operator. This librarian inserts the licences negotiated by different consortia (e.g., CRUI-CARE, BIBLIOSAN, etc.) and they are effective for every library of the organisations that subscribed to the contract.
- The librarian with the account of the standard operator. These librarians insert standard examples of licences published by the scientific publishers on their site, and these are effective for all libraries and organisations that don't negotiate licences.

There are about 60 librarians collaborating on the project and contributing to the growth of the database. In many cases, the person who inserts licences is not a librarian assigned to ILL, but instead a colleague who deals with management of electronic resources.

The choice of a system of cooperative filing and updating was a strength of the project and permitted a very high number of licence upgrades or new licences each year.

The CNR Bologna Research Area Library projected and standardised the first training for the project for the operator assigned to insertion. The trainings include a one-on-one Skype webinar and a coaching phase. Every two years, when there is a NILDE national congress, training sessions are provided to every librarian in the network. In recent years, since the pandemic started, online training sessions have been provided upon the request of specific organisations aiming at training all their librarians.

One of the positive effects of ALPE is the growth of knowledge and awareness about copyright and licences for electronic resources among the librarians who take part in the project. This growth causes positive effects in the organisations in which the librarians work.

The purpose of using ALPE is to allow ILL staff who fulfil requests on electronic resources to perform the operations necessary to fulfil the requests in the manner and under the conditions set by the publishers, and to do so automatically and without any expertise in the field of licences. ALPE allows them to answer the questions, “Can I send this file?” and “Under what conditions?” in a short time and without having to possess licensing expertise.

ALPE contents and licenses analysis

ALPE is a complex system composed of:

- management software
- a public archive
- a search engine

It can be integrated in other web systems through its API.

The **management software** allows insertion and updating of licences. There is an authentication system that allows work group operators to enter and update licences, and it allows librarians to search for and view licences that are valid for their own library.

The ALPE **public archive** (<https://nilde.bo.cnr.it/licenze.php>) is freely accessible to all and allows searching and viewing the licences of electronic periodicals. The public interface allows you to search for the licence relating to a specific bibliographic reference starting from some parameters, which are: ISSN of the magazine and year or ISBN in the case of an eBook.

The **search engine** is able to identify the correspondence between the journal publisher and the platform used to access the digital collection and to return only the licences relating to that particular journal for that year, reducing the problem of transfers of a magazine from a publisher. It is also possible to search for all the licences relating to a specific publisher or a specific platform, by selecting them from a drop-down menu. In this second case, the system returns all the licences associated with a publisher.

The advantage of a centralised licence management system is that each library's search results contain only the licences related to its own electronic collections. The ALPE archive has been populated with more than 900 licences related to 160 publishers.

Figure 1 shows the number of negotiated and standard licences per year present in the ALPE archive.

Figures 2 and 3 show in detail the percentage of ILL service allowed, not specified or forbidden in the year 2021 standard and negotiated licenses.

Figure 4 shows in which percentage International ILL is allowed or forbidden in standard and negotiated licenses in year 2021.

Figure 5 and 6 show the allowed method to send a document to another library, in standard and negotiated licenses in year 2021.

It's worth to notice, in all the above cases, that the negotiation activity carried out by libraries and consortia has a positive impact on the permitted uses found in the licenses.

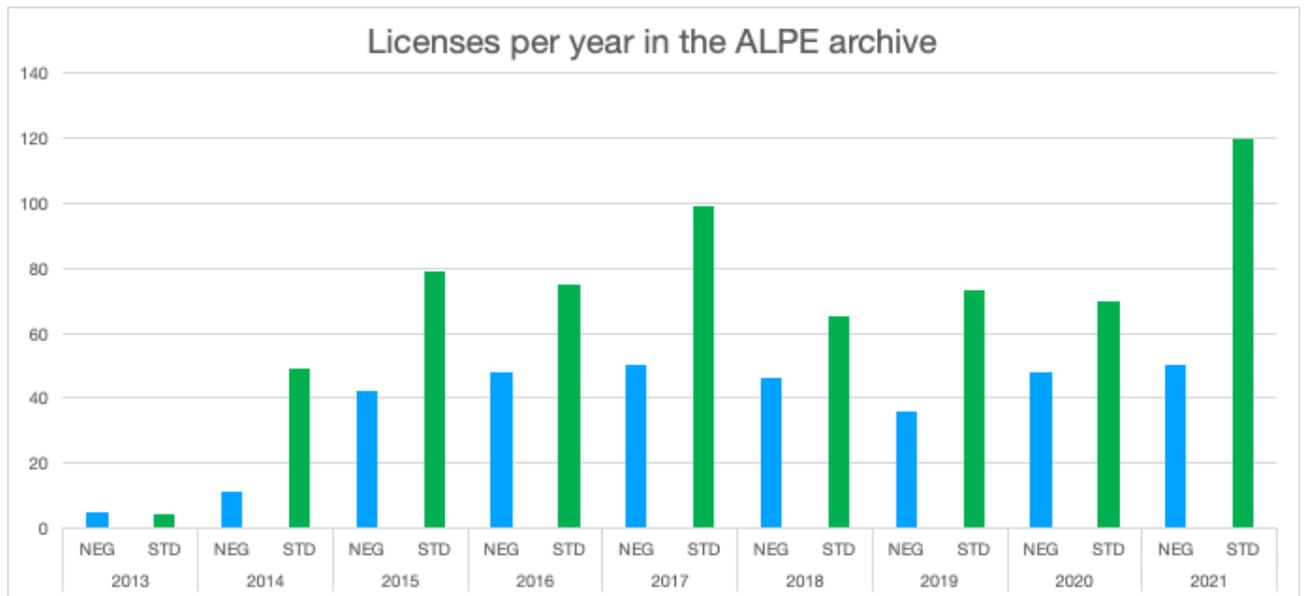


Figure 1 Negotiated and standard licenses in the ALPE database, per year



Figure 2 ILL allowed in standard licenses, year 2021

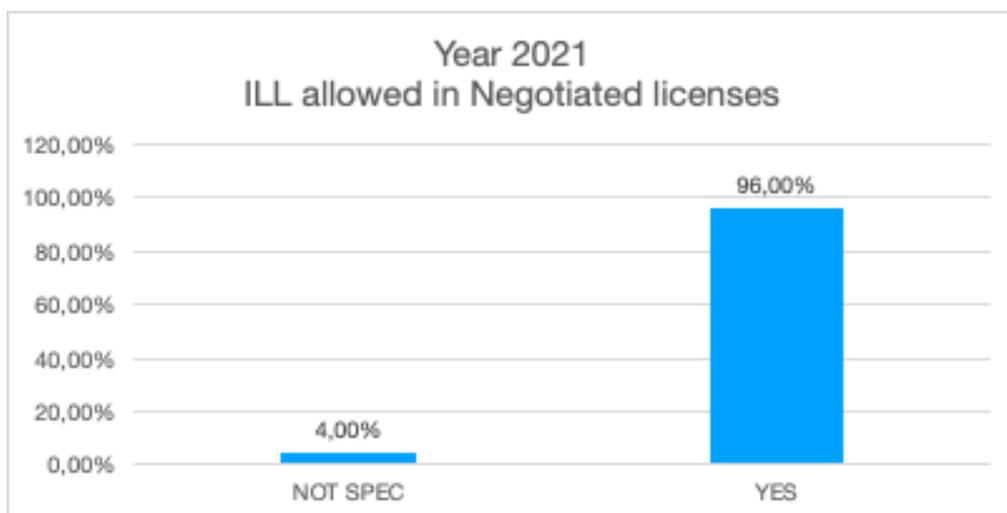


Figure 3 ILL allowed in negotiated licenses, year 2021

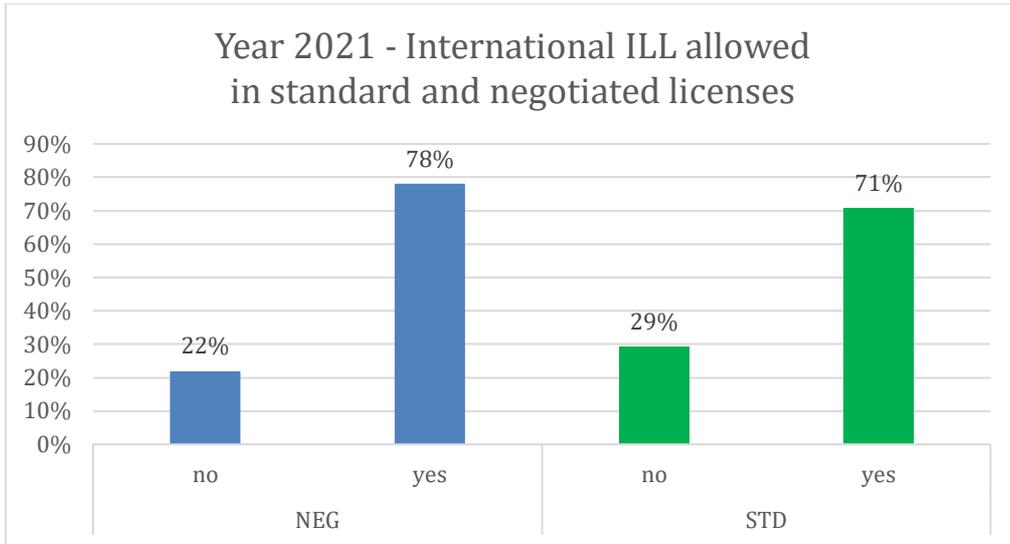


Figure 4 International ILL allowed in standard and negotiated licenses, year 2021



Figure 5 Allowed methods for sending documents, year 2021 standard licenses

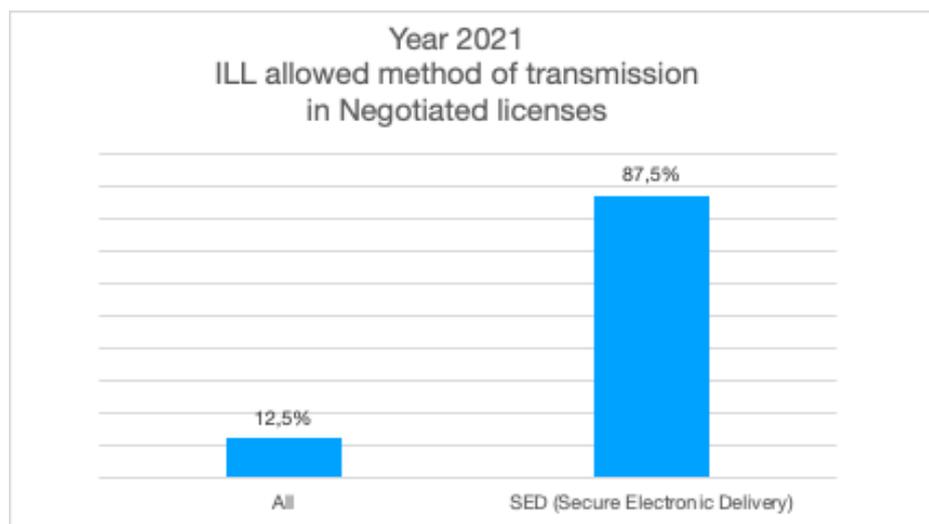


Figure 6 Allowed methods for sending documents, year 2021 negotiated licenses

ALPE API's and integration with the NILDE system

The ALPE system is equipped with a set of APIs that allow access to all the insertion and search functions from other web systems. Using the APIs, it's possible — for developers and everyone else interested — to gain access to ALPE data. The API technical documentation is at <https://nilde.bo.cnr.it/doc/api>.

In the NILDE resource sharing system, the integration with ALPE is accomplished using an ALPE widget for the simplified display of essential licence information for the librarian fulfilling the request.

The librarian who uses NILDE and fulfils a document delivery request therefore has the ability to click on the “find licence” button, which displays a widget that summarises and simplifies the contents of the ILL clause through an immediately understandable system of icons such as a traffic light. In this way, the librarian can easily choose the licence to apply. After the librarian clicks the "apply" button, the system interprets the conditions imposed by the licence by selecting only the permitted operations. If ILL is not allowed, the system blocks the request and prevents the librarian from proceeding.

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References

1854. *Copyright infringement -- first sale doctrine*. (2020, January 17). United States Department of Justice. <https://www.justice.gov/archives/jm/criminal-resource-manual-1854-copyright-infringement-first-sale-doctrine>
- A brief history of copyright*. (2006). Intellectual Property Rights Office. https://www.iprightsoffice.org/copyright_history/
- Balbi, G. (2013). Yes we can! Come muoversi tra i vincoli degli editori e le politiche di servizio. *Bibliotime*, 16 <http://www.aib.it/aib/sezioni/emr/bibtime/num-xvi-1/balbi.htm>
- Bamman, D., Butler, B., Courtney, K., & Schofield, B. (2021). *Building legal literacies for text data mining*. National Endowment for the Humanities. <https://berkeley.pressbooks.pub/buildingltdm/chapter/copyright-literacies/>
- Berne Convention for the Protection of Literary and Artistic Works*. (1886). WIPO. <https://www.wipo.int/treaties/en/ip/berne/>
- Blake, L., Fredette, H., & Jansen, M. (2013). Can we lend?: Communicating interlibrary loan rights. *Serials Review*, 39(3), 188-189.
- Brief to the Standing Committee on Industry, Science and Trade as part of the review of the Copyright Act*. (2018). Canadian Federation of Library Associations. http://cfla-fcab.ca/wp-content/uploads/2018/09/CFLA-FCAB_INDU_Brief_final.pdf
- Budapest Open Access Initiative. (2002, February 14). *Budapest Open Access Initiative Declaration*. <https://www.budapestopenaccessinitiative.org/read/>
- Copyright limitations and exceptions*. (2021). Copyright Alliance. <https://copyrightalliance.org/education/copyright-law-explained/limitations-on-a-copyright-owners-rights/copyright-limitations-exceptions/>
- Copyright timeline: A history of copyright in the United States*. (n.d.). ARL. <https://www.arl.org/copyright-timeline/>
- Copyright*. (2021). WIPO. <https://www.wipo.int/copyright/en/>
- Creative Commons. (2022a). *About CC licences*. <https://creativecommons.org/about/cclicenses/>
- Creative Commons. (2022b) *What we do*. <https://creativecommons.org/about/>
- Crews, K. D. (2014, December). *Copyright exceptions and limitations: Libraries and archives* [Slides]. WIPO. https://www.wipo.int/edocs/mdocs/copyright/en/sccr_29/sccr_29_presentations.pdf
- Cross, W. M. (2012). Restoring the public library ethos: Copyright, e-licensing, and the future of librarianship. *Law Library Journal*, 104(2), 195-218.
- Di Valentino, L. (2014). Conflict between contract law and copyright law in Canada: Do licence agreements trump users' rights? *FIMS Working Papers 1*. <https://ir.lib.uwo.ca/fimswp/1>
- Fair use copyright explained*. (n.d.). British Library. <https://www.bl.uk/business-and-ip-centre/articles/fair-use-copyright-explained>
- Fisher, W. W. (2021, July 8). Copyright. In *Encyclopedia Britannica*. <https://www.britannica.com/topic/copyright>
- Gardner, G. J., McLaughlin, S. R., & Asher, A. D. (2017). Shadow libraries and you: Sci-Hub usage and the future of ILL. *ACRL 2017*. <http://eprints.rclis.org/30981/>
- Ginsburg, J. (2016). *Overview of copyright law*. Columbia University. https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=2991&context=faculty_scholarship

- González-Solar, L., & Fernández-Marcial, V. (2019). Sci-Hub, a challenge for academic and research libraries. *El profesional de la información*, 28(1).
<https://doi.org/10.3145/epi.2019.ene.12>
- Harrison, R., Nobis, Y., & Oppenheim, C. (2018, November 9). *A librarian perspective on Sci-Hub: the true solution to the scholarly communication crisis is in the hands of the academic community, not librarians*. LSE Impact Blog.
<https://blogs.lse.ac.uk/impactofsocialsciences/2018/11/09/a-librarian-perspective-on-sci-hub-the-true-solution-to-the-scholarly-communication-crisis-is-in-the-hands-of-the-academic-community-not-librarians/>
- Hayman, R. (2016). Open access complements interlibrary loan services, but additional user education is needed. *Evidence Based Library and Information Practice*, 11(1). 57-59.
<https://doi.org/10.18438/B8DC9P>
- Kehnemuyi, K., & Larsen, S.C. (2019). Shadow ILL services: How scholarly pirate websites and hacking affect ILL. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 28(5). 139-149. <https://doi.org/10.1080/1072303X.2020.1749750>
- Katz, A. (2016). Copyright, exhaustion, and the role of libraries in the ecosystem of knowledge. *I/S: A Journal of Law and Policy for the Information Society*, 13(1). 81-124.
<https://tspace.library.utoronto.ca/bitstream/1807/89456/1/Katz%20Copyright%2C%20Exhaustion.pdf>
- Lamoureux, S.D. & Stemper, J. (2011). White paper: Trends in licensing. *Research Library Issues*, 275. <http://publications.arl.org/rli275/20>
- Limitations and exception for libraries and archives: Contract override*. (2019). International Federation of Library Associations. https://www.ifla.org/wp-content/uploads/2019/05/assets/clm/position_papers/ifla_position_public_lending_right/contract_override_final.pdf
- Mangiaracina, S., Russo, O., & Tugnoli, A. (2015). To each his own: How to provide a library user with an article respecting licence agreements. *Interlending & Document Supply*, 43(4), 199 – 206.
- Marrakesh Treaty to facilitate access to published works for persons who are blind, visually impaired or otherwise print disabled*. (2013, June 27). WIPO. <https://www.wipo.int/treaties/en/ip/marrakesh/>
- Matthews, B. (1890). The evolution of copyright. *Political Science Quarterly*, 5(4), 583-602.
<https://www.jstor.org/stable/pdf/2139530.pdf>
- More Information on fair use*. (2021). U.S. Copyright Office. <https://www.copyright.gov/fair-use/more-info.html>
- Okamoto, K. (2012). Licensed to share: How libraries are handling electronic journal article requests. *Journal of Interlibrary Loan, Document Delivery, and Electronic Reserves*, 22(4/5), 137-154.
- Paris Convention for the Protection of Industrial Property*. (1883). WIPO.
<https://www.wipo.int/treaties/en/ip/paris/>
- Protecting exceptions against contract override: A review of provisions for libraries*. (2019). International Federation of Library Associations. https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/exceptions-limitations/documents/contract_override_article.pdf
- Quilter, L. (n.d.). *First sale (or exhaustion) doctrine in copyright*. [Blog post].
<https://blogs.umass.edu/lquilter/copyright/first-sale/>

- Stim, R. (2019). *Welcome to the public domain*. Stanford Libraries.
<https://fairuse.stanford.edu/overview/public-domain/welcome/>
- Stim, R. (n.d.). *What is fair use?* Stanford University. <https://fairuse.stanford.edu/overview/fair-use/what-is-fair-use/>
- Suber, P. (2016). Knowledge as a public good. *Knowledge Unbound: Selected Writings on Open Access, 2002-2011*. MIT Press.
<https://knowledgeunbound.mitpress.mit.edu/pub/cjktrtqe/release/1>
- Submission to the inquiry into Australia's intellectual property arrangements*. (2016). Australian Libraries Copyright Committee.
https://www.pc.gov.au/data/assets/pdf_file/0004/195178/sub125-intellectual-property.pdf
- Taylor, D. (2021). *What is fair dealing and how does it relate to copyright?* Simon Fraser University.
<https://www.lib.sfu.ca/help/academic-integrity/copyright/fair-dealing>
- Territorial application of copyright (Territoriality Principle)*. (n.d.). Mobility Smart.
<https://www.smartatmobility.com/en/copyright/territorial-application-of-copyright-territoriality-principle/>
- Vollmer, T. (2017, January 16). *The public domain and 5 things not covered by copyright*. Creative Commons. <https://creativecommons.org/2017/01/16/public-domain-5-things-not-covered-copyright/>
- Ward-Ure, L. (2019). *Copyright uncovered: Fair use v fair dealing*. DACS.
<https://www.dacs.org.uk/latest-news/copyright-uncovered-%E2%80%93-q3-2018-fair-use-v-fair-deal?category=For+Artists&title=N>
- Wiley, L. (2004). License to deny? Publisher restrictions on document delivery from e-licensed journals. *Interlending & Document Supply*, 32(2), 94-102.

Further Readings

- Courtney, K. (2020, May 18). *Libraries do not need permission to lend books: Fair use, first sale, and the fallacy of licensing culture*. <https://kylecourtney.com/2020/05/18/libraries-do-not-need-permission-fair-use-first-sale-and-the-fallacy-of-permission-culture/>
- Electronic information for libraries. (2006). *Relationship between copyright and contract law: Electronic resources and library consortia*. EIFL Handbook on Copyright and Related Issues for Libraries. <https://www.eifl.net/resources/eifl-handbook-copyright-and-related-issues-libraries-english>
- Gardner, C. C., & Gardner, G. J. (2015). Bypassing interlibrary loan via twitter: An exploration of #icanhazpdf requests. *ACRL 2015*.
<https://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconf/2015/Gardner.pdf>
- Joseph, H. (2013). The open access movement grows up: Taking stock of a revolution. *PLoS Biology* 11(10). <https://doi.org/10.1371/journal.pbio.1001686>
- Tran, D. (2017). Elsevier v. Sci-Hub: Piracy of knowledge and the jurisdictional reach of U.S. copyright law. *Wake Forest Journal of Business and Intellectual Property Law*, 17(2), 198-225.
<http://ipjournal.law.wfu.edu/files/2017/04/Tran.Article.pdf>

Content Access and Technology

***Objective:** In this chapter, we provide a primer on key issues, tools, and questions around content access in the context of resource sharing, including the importance of open initiatives to facilitate access.*

General Topics on Content Access

Scholarly and literary works as well as other intellectual, creative, or information products are now widely described as “content.” This is because, whatever their genre or format, they are manageable and marketable through technology channels. Technology is usually the medium to supply and access the content.

Thus, information content has become a product to be delivered and consumed using mainly technological platforms. And this is true even when the final record is a physical document, not yet digitised. It is like that, moreover, because we live in a platform economy, and cultural, scientific, or educational activities are developed within that social framework (Kenney & Zysman, 2016). We acknowledge, therefore, that content access operates in the real-world digital economy.

In this chapter, we review how scholarly or literary content is accessed, and how the records and documents containing the information people need, look for, or like are reached. We explain which paths, methods, and tools are used and the kinds of platforms and procedures applied. We examine the position or role of libraries and resource sharing in the information economy.

We understand the term “technological platform” here in a broad sense, as a commercial, non-profit, or public organisation that operates a web-based or application service or technology supplying scholarly or literary content to people or other organisations.

The platforms disseminate content through all kinds of technological instruments: computers, tablets, smartphones, etc. The demand for information through mobile devices has skyrocketed, and content providers must deploy apps or adaptive tools and websites. In this way, the ubiquity of scholarly and literary content for users is practically achieved.

Intermediaries and Suppliers

As in any other market or value chain, we can distinguish, in a general sense, two major kinds of platforms: those that deliver information (metadata) with links to access the content but do not hold the content itself (intermediaries), and those that own or have the right to deliver the content record itself (suppliers).

Maybe this is not a net sorting of how things work and perhaps there are platforms or technologies that search or link to some external content at the same time they gather or host

other content in-house. But, broadly speaking, it seems that on one side we can use intermediaries to discover and locate content and on the other suppliers to get it.

Search Platforms

We can bring together the several kinds of intermediaries under the concept of search platforms because the main function they perform is to allow us to explore, find, identify, locate, choose, etc. the content records and make it easier for us to access them through a web link, URL, DOI, handle or some other location data. Search platforms are used by ordinary people as well as by researchers, students, or information professionals. What may be different are the tools, methods, and behaviour applied by each kind of user or in specific circumstances. These platforms include [Google Scholar](#), [Dimensions](#), [BASE](#), [Researcher](#), [DataCite](#), [OATD](#), [WorldCat](#), and [KVK](#).

In a traditional view, libraries would house the content. But some of the outstanding and more used library tools are union catalogues that just indicate where the documents are located, or discovery tools that index a lot of digital content hosted on other websites. No catalogue contains the documents themselves, but they refer to it, be it in digital or print format. Information consumers or professionals primarily interact with the content using platforms on digital devices. This means, of course, libraries are in this respect intermediaries, usually in a small segment of the market compared with commercial entities.

Content Platforms

There are, of course, several kinds of suppliers as well, but we might call them all content platforms, as the main function they perform is to deliver the (textual, image, video, data, etc.) content they host or, in some way, to fetch it for the reader or user. [IEEE Xplore](#), [Zenodo](#), [PubMed Central](#), [SciELO](#), [Espacenet](#), and [The World Bank DataBank](#) are among these content platforms.

It makes sense that, commonly, both novice and expert users as well as information professionals turn to search platforms as a first step, to do a literature review, for example, or to find content and then go to content platforms to access the full texts, documents, and so on. That is a usual procedure, but not exclusive or mandatory. Many times, queries are executed directly on the content platforms known to be relevant and effective to fulfil a demand in a certain field or format.

The above method is the logical and reverse procedure of the mainstream publication process. When new content is published, distributed, or uploaded to the internet, it is issued through a content platform, a primary source. It then becomes indexed in search platforms, or secondary sources.

Information professionals should and do have, in fact, a good mastery of both sorts of content sources to train library users and to solve difficult questions on content access. In sections 4.2 and 4.3, we include a guide to search and content platforms and provide more examples.

Open vs. Payment Business Models

Content access is strongly conditioned by business models in scholarly and literary publication, just as with movies, music, video games, or other intellectual assets. There are commonly two models: open access funded by authors or research organisations, and commercial publication charged to consumers, libraries, etc. In practice, those who pay are often the same people; in one case (open), payments fund publishing, and in the other (commercial), payments are made at the time of purchase or use.

Open access (OA) is a part of the general concept of open science, which encompasses several issues: open collaboration, open publication, open research data, open-source code, reproducible research, open evaluation, citizen science, open education resources, etc. Open science is driven primarily by research funding agencies with the purpose of building a more productive and efficient research and innovation environment, whose results are directly and easily transparent, available, and reusable for other researchers, entrepreneurs, and worldwide society. It is not just a philanthropic endeavour of some selfless altruists.

OA publication usually entails content reusability and, therefore, licensing under open licences. It ensures research publications are freely available so anyone can benefit from making research available to read, and it allows others to reuse that research. When research is held behind a publisher's paywall, this restricts access to only those who can afford it, preventing benefits such as: 1) Improving the reach of research; 2) helping to provide evidence of impact; 3) improved reputation for researchers and their host institutions through increased citations; and 4) improved quality of research through open and transparent research practices.

In contrast to traditional publishing models, the business model usually works in one of two ways:

- **Gold OA** means that the final published version of the article is permanently and freely available online for anyone, anywhere to read. An article publishing charge (APC) is usually applicable when publishing gold OA. With gold open access, the author can share their research anywhere they choose as soon as it is published, keep the copyright, and publish under a licence with few or no restrictions on how other people can reuse the work.
- **Green OA**, also known as self-archiving, is when an author posts an earlier version of their manuscript in repositories and online. This enables the author to share their article without having to pay an APC, but usually the copyright will remain with the publisher of the final work. The publisher will typically enforce a predetermined embargo period on free access.

These various options mean that for a single scientific document, there may be several versions on the internet, on publisher platforms, on aggregation websites, or in subject and institutional repositories. That redundancy is somewhat like when a print book appears in several libraries. It is perfectly managed by search platforms to locate and provide access to content. Even more, redundancy fosters content access.

The OA business model is steadily growing and gaining momentum, particularly in scientific publication. If we look at data on [the Lens](#) scholarly database, a broad search platform with 245 million references from all periods and subjects, OA represents 17.5% of the whole set and a full 35% of documents published in 2020. If we consider [Dimensions](#), a more selective scientific database with 125 million references from all periods and subjects, 29% of all documents are OA, and a majority 53% of publications in 2020 are OA. Piwowar et al. (2018) analyse these trends as well. It is probable that in a few years most scholarly publications will be OA and available easily through search engines and platforms for everybody.

Libraries are playing an active role in this process, promoting and teaching OA among their researchers, managing many open repositories, signing transformative agreements with publishers to turn scientific sources into OA channels, and adding value to their institutions' research outputs to spread them more openly.

But not all publications are going to OA models. The traditional payment model is still here and will remain for a lot of content. The cost of commercial and high-demand documents, particularly content in some disciplines, will continue to be borne by the consumer through subscription or pay per use. Digital rights management techniques are used to enforce this business model. And libraries will continue subscribing to content for patrons under IP access control or institutional authentication.

Identifiers Architecture

The whole framework of content access is supported on a growing amount of standard identification of its components and agents. Standard identifiers make it possible to control, describe and manage scholarly and literary content precisely and enable technology platforms to interact with each other efficiently. Accessing a digital document wherever it may be located, through a resolvable key, has been a great achievement, for example. Identifiers are extremely important for information professionals, but for users and researchers too.

To manage the content itself, the traditional ISBN, ISSN, etc. continue to be used. But now persistent identifiers such as DOI, the Handle System, etc. support universal accessibility and findability of scholarly content on the internet. Other codes, such as PMID for PubMed, or arXiv ID, are widely used to control and access content.

Identifiers for researchers have become extremely important as well, to clarify the ambiguity of personal names. ORCID, ResearcherID, and some other systems have been launched for this purpose. In the case of research centres, ROR, predominantly, and GRID are used. Attempts are also being made to develop an identifier for research grants or awards.

Other relevant content access or intermediary technologies are summed up in section 4.4.

Libraries, Content Access, and Resource Sharing

The digital platform economy reaches directly to end users in every sector and market, and the larger the platform, the greater its ability to reach consumers globally. With the COVID-19 pandemic, this trend has increased considerably. Scholarly and literary content is not an exception, so most readers and researchers access and use information through the bigger, easier,

and more straightforward search and content platforms — quickly and without intermediaries, if possible. They even sometimes use well-known *pirate* websites or shadow libraries.

Technology has turned many people into impatient consumers expecting immediate gratification. They find it difficult to face delays or complications that impede the satisfaction of their needs, even when it involves breaking unclear and questioned regulations. This is even apparent when they are used to moving in an ecosystem of abundance and redundancy of information, even information overload.

Libraries are small agents within such an environment and are struggling hard to place their search platforms and services up against the big players in the sector. Often, researchers or students access library-purchased content through Google or other search platforms without even realising that the content was provided by their local library or that of an institution. Libraries have a better chance to be recognized on their proprietary and exclusive content platforms, which channel and promote the scientific production of their own institutions, original collections, or documentation that no one else has, becoming more suppliers than intermediaries.

Nevertheless, a library, above all, tries to serve a community and to help people to advance knowledge by giving advice, support, and instruction. Additionally, the library has a role in teaching and helping users and readers to access content whenever it is hard or complicated for them, as may be the case sometimes. Training and effective personal help in content access and digital or information literacy, generally speaking, are important tasks for libraries, and thus for resource sharing librarians as well.

We started this reflection with the platform economy, but we cannot finish it without mentioning the attention economy. With information overload, the scarce resource for which the platforms compete is the available time of users, that is, their attention. If the user's need is at all complex, they often don't have is time to proceed through the platforms to reach the content. Or, more often, it is difficult for them to analyse, choose or evaluate such a large amount of information inputs and results. *Saving time* for users, easing their way to valuable and appropriate content, is a role for librarians and resource sharing librarians in particular.

The role of libraries' resource sharing services in the context of today's content access habits and procedures may therefore be understood as having three aspects:

- To get hard-to-find content, or to meet special needs not easily solved by users through conventional platforms, because the materials are intrinsically difficult to find or because users lack skills, time, etc.
- To get paid content (that is, not openly available on the internet), supplied under cooperation agreements permitted by the legal regulations for libraries.
- To get non-digital content, including print or physical documents that are loaned or reproduced and delivered among libraries to meet users' demands.

For sure, this altogether does not represent a large share of the whole content industry sector or a significant part of the content that is uploaded and downloaded across all internet platforms. It reminds us rather of the idea of *the long tail* (to use the phrase coined by Anderson, 2008). It's still a valuable role and a public good because due to societal inequities, not everyone has the same

opportunities to access content. In contrast, libraries bring equity. Libraries and librarians add real value to education and knowledge development — roles that are extremely important.

Search Platforms

As has been said, information seekers, academics, and information professionals go to search platforms first to find the material they need, or to stumble upon it while they are browsing. Of course, the initial trigger may be a recommendation, an information feed, a reference in some other document, a piece of news or a post on a social network. We will sort search platforms into several groups and mention a few examples. There are many of them, and most are open and free on the internet, though some may be provided by subscription through academic libraries.

General Search Engines

Content users, even sometimes the more conspicuous researchers, turn to general search engines to access some scholarly or literary documents, because it simply appears to be the easiest or fastest method to access them, given the fact those search engines do a good sweep of the internet. This view is not commonly shared by information professionals, who often recommend specialised research databases.

Google	https://www.google.com/ Most used and greatest coverage.
Bing	https://www.bing.com/ An alternative option, from Microsoft.
DuckDuckGo	https://duckduckgo.com/ The best-known representative of search engines that claim to protect user privacy.
Yandex	https://yandex.com/ Outstanding search engine from the area of Russia and Eastern Europe.
Baidu	https://www.baidu.com/ Outstanding search engine around China, etc.

Academic Search Engines and Databases

There are a great number of specialised and multidisciplinary academic search platforms that are heavily used by researchers and information professionals. We can find search engines, federated metasearch gateways, databases, OAI-PMH harvesters, and more. In every case, the tool links to the full text versions of the documents, whether open or fee-based, or via OpenURL towards purchased library content.

Google Scholar	https://scholar.google.com/ By far, the greatest and most diversified coverage, but with limited features to retrieve and manage information.
The Lens	https://www.lens.org/ Good capabilities to search and analyse patents and scholarly literature.

Semantic Scholar	https://www.semanticscholar.org/ Very broad and comprehensive information about worldwide scientific literature.
BASE	https://www.base-search.net/ Harvester of enormous quantities and all kinds of scholarly content worldwide.
Web of Science	https://clarivate.com/webofsciencigroup/solutions/webofscience-platform/ A well-known payment-based international scholarly search platform whose main resource (its citation indexes) is called the Core Collection.
Scopus	https://www.elsevier.com/solutions/scopus/ Another important payment-based database containing abstracts and citations for international multidisciplinary research.
Dimensions	https://app.dimensions.ai/ One more abstract and citation international multidisciplinary research database, free for basic searches and with some payment premium services.
Open Alex	https://docs.openalex.org/ The newest scholarly search engine, launched in February 2022, with massive and multidisciplinary coverage.
PubMed	https://pubmed.ncbi.nlm.nih.gov/ U.S. National Library of Medicine biomedical literature database from Medline and other sources.
DataCite	https://search.datacite.org/ DataCite's global search engine.

Library Discovery Tools

These are (SaaS) cloud indexing services supplied to libraries by information industries, giving them the ability to offer a customised searching platform of selected open access and payment-subscribed content as well as library holdings. Libraries have made a great commitment to compete with scientific search engines and provide their users a powerful, unified, comprehensive service tailored to local needs and resources. The impact of discovery tools on library use has been positive, but not enough to overcome the prevalence of non-library search engines, tools, and information sources. Recently, library service platforms have adopted discovery tools such as Alma, WorldCat Management Services (WMS), etc. — the new generation of library management software.

Ebsco Discovery Service	https://www.ebsco.com/academic-libraries/products/ebsco-discovery-service
ExLibris Summon	https://exlibrisgroup.com/products/summon-library-discovery/
ExLibris Primo	https://exlibrisgroup.com/products/primo-discovery-service/
Encore Discovery	https://www.iii.com/resources/product-overview-encore-discovery-solution/

WordCat Discovery	https://www.oclc.org/en/worldcat-discovery.html
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Library Catalogues

Among search engines, library catalogues and union catalogues of physical and digital content are of course very useful to find and locate documents. But catalogues are used relatively more by librarians than by researchers or students, unless they are just looking for certain physical books. Users like better tools with more reach to easily get documents on the screen.

Library of Congress	https://catalog.loc.gov/ LoC catalogue.
OCLC WorldCat	https://www.worldcat.org/ International union catalogue.
Karsruhe Virtual Katalog	https://kvk.bibliothek.kit.edu/ Federated search tool of multiple catalogues.
Catalogue SUDOC	http://www.sudoc.abes.fr/ French union catalogue.
Library Hub Discover	https://discover.libraryhub.jisc.ac.uk/ British union catalogue.

Literature Mapping Tools and Searching Apps

Many tools to search and analyse scientific literature are being developed based on graphic visualisation and citation networks, bringing new approaches to information retrieval and access. Also, personal apps for researchers and literature searching are emerging, as in every other sector. More and more possibilities appear every day to find scientific information through varied, flexible, innovative, and personalised tools.

Litmaps	https://www.litmaps.co/ Science discovery through visual navigation and citation networks.
Citation Gecko	https://www.citationgecko.com/ Literature search and graphical visualisation of relationships from an initial set of seed papers.
ResearchRabbit	https://www.researchrabbit.ai/ Interactive visualisation and exploration of networks of papers related in different ways to selected papers.
Researcher	https://www.researcher-app.com/ An app to find and follow contents from 15,000 scientific journals and to access those to which one's institution subscribes.
R Discovery	https://discovery.researcher.life/ An app that provides a feed of papers

about personal research interests, with summaries, highlights, etc.

Content Platforms

Content platforms hold and deliver full text documents, linked by search tools, or directly accessed by users looking for information, if the documents are relevant or well-known. Content platforms should own IP rights or licences to disseminate content over the internet. Libraries subscribe or purchase documents through payment content platforms and index them within discovery tools to deliver them to their users. However, as we have noted, many of them access that content directly or through other search tools, and a growing proportion is openly available. Thus, the situation seems rather blurry, especially for students and researchers.

Publishing Platforms

First, there are the sites where publishers make most original content public, whether open access or through a paywall. There could be thousands of examples.

IEEE Xplore	https://ieeexplore.ieee.org/ Books, conferences, journals, magazines, standards, etc. from IEEE, where paid content predominates.
Ubiquity Press	https://www.ubiquitypress.com/ Open access books and journals.

Distributors, Aggregators, etc.

These agents integrate content from other publishers or creators in their platforms to deliver it to libraries, organisations, and end users, adding some value or services. Typically, a big platform distributes content from many small producers.

EbscoHost	https://ecm.ebscohost.com/ Books, journals, and databases marketed on a subscription basis to libraries, institutions, and other clients.
ProQuest eBook Central	https://about.proquest.com/en/content-solutions/books/ Books from many publishers distributed to libraries, etc.
Ingenta Connect	https://www.ingentaconnect.com/ Aggregator of scientific publications from many publishers.
DOAJ	https://doaj.org/ International directory of open access journals and aggregator of many of their journal articles.
Dialnet	https://dialnet.unirioja.es/ Platform of Spanish & Ibero-American scholarly content encompassing several million documents, mostly full text.

Repositories & Digital Libraries

Digital repositories and libraries make content open and freely available by digitising physical documents or disseminating originally digital items. Sometimes these materials are versions or copies of documents published or distributed elsewhere, improving accessibility through redundancy. Many libraries are taking an active role in building repositories of scientific, historical, or cultural content, becoming successful suppliers over the internet.

JSTOR	https://www.jstor.org/ A non-profit archive helping libraries preserve and access historical collections of scholarly content.
arXiv	https://arxiv.org/ Open access archive in physics, mathematics, and other quantitative sciences; a historical model for disciplinary repositories.
PubMed Central	https://www.ncbi.nlm.nih.gov/pmc/ U.S. National Library of Medicine open access archive in biomedical literature.
Zenodo	https://zenodo.org/ EU research repository, arranged by OpenAIRE project and operated by CERN, containing e-prints, datasets, etc.

Social & Group Networking Platforms

The development of social web applications and services in the field of science and research has given rise to platforms that allow scientists and students to access content through personal or group collaboration and exchange networks or research cyber-infrastructures. Sometimes this sharing borders on the violation of IP rights, or outright violates them, but it is really powerful and effective.

ResearchGate	https://www.researchgate.net/ Best-known and most used academic social network where scholars interact and share their papers.
Mendeley Library	https://www.mendeley.com/ Through this platform, researchers can search and find information and share content <i>responsibly</i> , that is, limitedly.
ScienceOpen	https://www.scienceopen.com/ Researchers explore, share, recommend, and review papers in an interactive discovery environment.
OSF	https://osf.io/ The Open Science Framework supports research projects, group collaboration, and sharing materials, as many science cyberinfrastructures do.

Content Access Technologies

Last but not least, access to content is carried out and favoured by a set of intermediary technologies that are essential in the online environment and should be mentioned here. OpenURL and link resolvers, off-campus authentication systems, full-text plugins, etc. make it possible for people to access content and go from one platform to another to reach their targets

— typically, for instance, from a discovery tool to a full-text content tool. In such a way, digitally literate researchers and readers are quite self-sufficient in their use of information.

OpenURL Link Resolvers

OpenURLs are persistent addresses to digital resources that include a description of the resource and are transported over the network to enable context-sensitive services or access from one platform to another. Thus, it is possible to build massively interlinking bridges, for instance, among bibliographic search databases and content archives in order to access full text.

Commercial software known as link resolvers are used in libraries to implement OpenURL access in their search and discovery tools to reach full text documents, becoming an essential pathway in content access.

Full Text Finder	EBSCO technology to operate with EDS discovery, databases, etc.
ExLibris SFX	ProQuest Technology to operate with Primo discovery, databases, etc.
Link Manager	OCLC technology to operate with WorldCat discovery, databases, etc.
Libkey	Third Iron set of linking technology products to ease content access.

Off-Campus Content Access

Technologies that make it possible for the members of a university or institution to access its library's purchased digital content from outside their facilities are a fundamental tool. Now, SAML (*Security Assertion Markup Language*) federated identity systems provide an easy way to find and get paid content. But there are even more solutions, such as institutional proxies and VPNs. Recently, several publishers have launched their own technology for this purpose, to ease access their full texts. Even Google has entered this space.

EduGAIN	https://edugain.org/ Education and research world collective of identity federations and identity providers.
Shibboleth	https://www.shibboleth.net/ Consortium for identity management.
GetFTR	https://www.getfulltextresearch.com/ It enables institutionally subscribed full text access for associated publishers, once the user has authenticated in their institution for their first document.
Google CASA	<i>Campus Activated Subscriber Access</i> : when someone uses Google Scholar for the first time in campus, a <i>token</i> is automatically set in their device, enabling later off-campus access to library resources of affiliated content suppliers for several months.

Full Text and OA Plugins

With the increase in open access versions of published scholarly literature, some tools to find and retrieve them have emerged and become quite popular. Most of them can be installed as browser extensions and work efficiently, allowing a user to jump from the search tool reference or paywalled article to the open access full-text version, be it in a repository or on a publisher's website. They traditionally aren't as effective as Google Scholar at finding open access documents, but once a document has been located, they are a quick help to gain free access.

OA Button	https://openaccessbutton.org/ Part of OA.Works, with InstantILL as well.
Unpaywall	https://unpaywall.org/ Part of OurResearch
Endnote Click	https://kopernio.com/ Part of Clarivate services, formerly Kopernio.
Lazy Scholar	http://www.lazyscholar.org/ With some other services.
Core Discovery	https://core.ac.uk/services/discovery Plugin for repositories, enriching metadata-only pages in repositories with links to freely available copies of papers.

References

- Anderson, C. (2008). *The Long Tail: Why the Future of Business is Selling Less of More*. Hyperion.
- Kenney, M., and Zysman, J. (2016). The rise of the platform economy. *Issues in science and technology*, 32(3), 61. <https://issues.org/rise-platform-economy-big-data-work/>
- Piwowar, H., et al. (2018). The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles. *PeerJ*, 6, e4375. <https://doi.org/10.7717/peerj.4375>

Content Management

Objective: *To inform and support training, we provide a primer on key issues, tools, and questions around content management and technology in the context of resource sharing.*

Sidney Sheldon said: *“Libraries store the energy that fuels the imagination. They open up windows to the world and inspire us to explore and achieve, and contribute to improving our quality of life.”*

Library collections appear in many shapes and sizes in both physical and digital formats, but it's the content that's contained within that provides the “fuel” as illustrated in the above quotation. Considering how to contextualise “content or collection management” alongside massive changes in technology, user behaviour and expectations, and publishing, suggests that libraries have to continually adapt and update the way they perform their role.

Historically, libraries were measured against the size and breadth of their collections, with acquisition decisions often made by subject specialists keen to build and enhance narrow fields of content ranges. Nowadays it's generally accepted that the way to measure the effectiveness and value of libraries is in terms of the amount of “value added.” This isn't always a scientific evaluation, but an understanding of how the content has provided value to the learner, researcher, student, or even society in general. This presents a powerful message underlying the importance of maintaining and supporting libraries.

Rapid changes in research behaviours and user expectations are shaping the library's physical environment with an increasing demand for flexible and varied learning spaces, study tools and research facilities. Users expect to access the information they need quickly and easily from any location on any device, as they would in a retail environment. They expect the content and services to match the tasks they need to perform and provide them with quick and easy access to relevant content. They expect great quality and great customer service. They expect the library's services to be easy to use and open to everyone, whatever their background, characteristics, location, or needs.

The library must curate its various assets combining both print and digital to ensure the currency, longevity, depth, and breadth of information is appropriate to the needs of researchers, students, and readers. Collections require differing management and development strategies, depending on their age, subject, demand profile, and/or value. The various strategies need to consider the efficacy of purchasing and “owning” the content outright or whether to obtain access to the content on a case-by-case basis. The latter could be achieved by having a licence agreement with the publisher to access the content “just-in-time” or it could be done by simply obtaining the item on demand through ILL. To make informed decisions, it is vital for the library to understand the demand profile by publisher and title. By having this management information and understanding the cost per use, they can then make informed decisions on the best solution for access.

The pandemic and subsequent lockdowns completely changed the way in which we needed to work and study. Remote interaction was the only way to engage in research and learning away from the physical library, and therefore access to online learning (and content) was vitally important. As a result, collection management strategies now also need to consider how to increase access to digital or digitised content in order to mitigate against future lockdowns and support the increased appetite for remote working.

Meanwhile, librarians still face the ever present challenges around storage space and tight budgets. They must embrace ongoing developments such as open access publishing and the exponential growth in digital information that libraries licence rather than own. These are major factors in accelerating this changing environment. Libraries tend to adopt a mix of collection management approaches in order to offer optimal access to collections depending on factors including the subject matter, collection media type, cost, and demand profile.

Three basic questions to ask are:

1. What contemporary content does the library wish to collect or connect¹⁰ to?
2. How is that content acquired and stored, or how is it linked to acquire and store it?
3. How is that content made available to everyone in the short and long term?

Another consideration in terms of acquiring content is how to provide access for both local library patrons and those external to the organisation, whatever their background, characteristics, or location. Through all of this, the aim is to generate value to a broader range of constituencies and thus enrich the research infrastructure in this time of global recovery and renewal.

Accordingly, a *collection management/development strategy* is an important framework to inform decision making and define purpose. The strategy should aim to ensure the library is collecting and providing access to content that is needed by the library user base, which could be researchers, academics, practitioners, and, of course, learners. It should provide transparency by explaining the thinking behind what is acquired, and the principles that will inform selection in the future.

The strategy should consider the relevant formats, disciplines, subjects, and languages. It should consider channels through which the content can be acquired, including voluntary deposit, purchase, donation, and exchange. It should also consider content held by other organisations to which the library connects, either permanently or for a fixed period.

¹⁰“Collect” and/or “own” the item. This would involve purchasing or subscribing to the content. An alternative is to “connect,” by linking to a publisher website (requiring a licence), downloading it as open access (not requiring a licence), acquiring it by document supply, and/or downloading it from any other source on the internet (including unofficial sites).

Importantly the strategy must also ensure the library acquires material legally, ethically, and with due diligence, together with ensuring it respects and protects copyright and other intellectual property rights.

Connecting to Content ‘Just in Time’

Publisher “Pay Per View” (PPV) Journal Articles

This route may be used when the library does not subscribe to the content. The end user may purchase the opportunity for temporary access to a PDF copy of the journal article by credit card. Most contemporary content can be accessed in this way, but it can be an expensive option, as the user is paying a fee that must cover both the service and the copyright royalty payment.

Document Supply

At one time, this was a very popular route to a wide range of content, both historical and contemporary. This approach has diminished in the wake of “big deals” (where publishers offer bulk access to wide ranges of journal titles) and other routes described in this section. Examples of those remaining include the British Library’s BL on Demand, Reprints Desk, SUBITO, the Copyright Clearance Centre, and Research Inc. Although this approach requires the lender to purchase (or licence) the collection item, use of this route often necessitates the inclusion of certain frictions aimed at making the user journey less satisfying than the publisher PPV model. These may include the inability to save the item to a desktop, limits on printing, limited access time periods, etc.

Interlibrary Loan (ILL): This traditional sharing route has been around a long time. Its success is partly due to the collaborative way in which libraries work on a shared platform such as OCLC WorldShare. No library can own everything; therefore, working together and sharing collections presents a much wider range of choices to users. The ease with which it takes place is predicated on the sharing technologies in place such that a “borrower” can submit a search term and easily find a “lender” who has the item and can subsequently provide it.

ILL requires the lender to “own” the item, enabling authorised libraries the ability to share with similar libraries on a non-commercial (sometimes called private use / academic study / fair dealing) basis, which also comes with frictions, or limitations. This exception in law is used in most countries; in the UK this is called library privilege and is used extensively between the UK higher education sector and the British Library; a similar exception in the United States is known as fair use.

In some countries, digital ILL is tightly restricted with the inherent constraints that one would expect to see in a physical ILL application, such as being permitted to share one book chapter or 5%, whichever is greater, or in the case of a journal, just one article.

An extension of the above is the recent arrival of controlled digital distribution and lending, which is explained in detail in Chapter 3.

IFLA has recently issued a guidance statement on this subject

(<https://www.uksg.org/newsletter/uksg-eneews-494/ifla-releases-statement-controlled-digital-lending>).

Unofficial Routes and Shadow Libraries

Nowadays, users often start search journeys on Google and not in library catalogues.

Consequently, numerous “hits” sometimes offer access to unofficial content free of charge. Of course, for hard-up students this can be a tempting route, but it also carries risk, as the provenance of such collections is unknown. Nonetheless, use of the more well-known shadow libraries has become increasingly popular. (See Chapter 3.)

Collecting Content ‘Just in Case’

Collecting (Purchasing) Content¹¹

The traditional way of acquiring collections has over the years become more difficult to sustain as publishing costs have increased and, conversely, budgets have been reduced. An alternative, in the case of journals, is to purchase back files. This involves purchasing content that is a few years old at a reduced cost after the publisher has had the opportunity to market and sell in the early, usually most lucrative years of publication.

Decisions must also be made as to whether to purchase a physical copy or digital. Points to consider would be:

- Stability and reliability of access
- Preservation (archival intent) responsibilities
- Content being the same (no loss of content between print and digital versions)
- Accessibility (i.e., access for people with disabilities)
- Evidence of user preferences

Other Factors to Consider

¹¹ The British Library also receives UK published content via [Legal Deposit](#), but this is only accessible within the Reading Rooms.

The above basically describes access to primary source materials, but there are also other library collection types that need to be considered as part of the overall strategy of the library. Examples include:

- **Special collections:** The library may own historic heritage collections that may be part of a legacy or relate specifically to the library and must be retained not just for research and study purposes but as a historical record. This material may be composed of manuscripts, archives, photographs, ephemera, documents, or art, providing a rich resource for staff, students, and the wider research community.
- **Grey literature:** This term is used to describe a wide range of information that is produced outside of traditional publishing and distribution channels and may be rare or hard to find due to its lack of formal cataloguing. Generally, it is produced by non-commercial bodies such as government, academia, business, and industry. It may vary in terms of electronic and/or print formats.
- **Donated collections:** For a library to accept donations, they generally must fit within the scope of the collection management strategy. Therefore, usually the donated content is merged with existing collections to form a single collection. Conversely, the donation may fall into the category of special collections (noted above) and therefore a retention decision may be agreed upon.
- **Locally produced content:** Depending on the size and type of organisation to which the library is affiliated, there may be a need for the library to catalogue and retain “home”-produced content. A good example here is theses. Doctoral theses and dissertations can provide a wealth of unpublished content of high value to future students and researchers. In this case, the library must often manage the preservation and access to such types of collections physically and/or digitally.
- **Datasets:** In today's digital world, it can be just as important to access supporting datasets as it is primary source materials. Accordingly, the library must have a digital asset management approach that can link the data to the primary source material, which can often be challenging. A key aspect here is to ensure digital assets are created with unique or persistent identifiers and also that descriptive metadata is tagged in such a way that the user may search and link to the complete package of content.

How to Inform Acquisition Decision Making

A good blend can be provided by adopting a collection management approach that reflects the organisational priorities and budgets of the library, in turn informing the best fit.

Making acquisition decisions has historically been difficult due to the complexities of modelling the different options against the potential demand. A new tool used within UK higher education for helping with decision making on journals is the use of the Unsub tool, <https://unsub.org/>.

The choice may also be affected by the subject matter. For example, it is more likely that science, technology and medicine journal content will be published digitally and be more expensive to purchase. Many university libraries will work as a community and look to purchase as a collective group on the proviso that they can subsequently share between members of the community or consortia. In a similar way, researchers and users of arts and humanities collection media may favour the use of physical collection assets and therefore the library may choose to purchase directly or acquire via ILL.

Storage of physical collections does come at a price; the cost of retaining and preserving physical content throughout its life cycle can be excessive. Working collaboratively can reduce the overall collection management costs, assuming that sharing arrangements are in place.¹²

An example of a collaborative storage approach is when the British Library worked with UK higher education libraries on a project to de-duplicate low-use printed journals, ultimately reducing physical storage in university libraries by 130 linear kilometres and making a significant capital saving. (See the [UK Research Reserve](#).)

More recently, UK higher education libraries have increased the use of ILL by sharing digital content using common library management systems and/or sharing technologies such as Rapid ILL (an Ex Libris product). The benefit is that they theoretically can reduce the acquisition spend and use ILL instead, accepting that the speed of service may be slowed and that there are frictions, as noted earlier.

Inevitably this presents a challenge to traditional publishing models, another feature of this challenging landscape that libraries find themselves navigating. The exponential increase in available content and rising publisher costs equate to an unaffordable business model for many libraries, hence the changes positioned above. The traditional way of publishers recouping a return on their investment is changing due to the rise in open-access content. Notwithstanding, libraries learned from the pandemic that it is important to collaborate and share across territorial boundaries and not be impacted by commercial obstacles. This then will require a close dialogue with publishers to ensure all stakeholders can participate in new ways of working.

¹² An example of a national approach to print journal coordinated retention and utilising library space more effectively, [UK Research Reserve](#).

Resource Sharing Operations Management

***Objective:** We provide insights into key issues to consider around the establishment and ongoing operation of resource sharing departments. This chapter provides support for reflection on the topic across the library field.*

Resource Sharing Operations — Beyond Circulation

Libraries go beyond their own collections to meet their patrons' needs by reciprocally sharing the resources of other libraries.

The basic assumption of this activity is that no library, even the well-funded, can have everything; hence they must depend on other libraries to fulfil all the needs of patrons. Interlibrary loan, document delivery, consortial borrowing, and shared collections are among the key elements that help libraries provide access to additional resources that are not available in their local collections.

Print books must be returned to the owning institution; articles, book chapters, and conference proceedings are scanned for electronic delivery. Several operations and various types of technical infrastructure are needed to support these different models of resource sharing. Resource sharing operations go beyond local circulation activities (lending and borrowing to a single library community).

The local circulation operation is based on parameters designed to provide equitable access to library materials. Circulation functions should be established to determine whether an item can be borrowed by a given category of patron in the main campus or the satellite libraries, the duration of loan period, whether renewals and holds are allowed, and what measures apply when materials are overdue or lost.

The circulation of resources within one library, even if it operates satellite libraries, is a well-recognized process and can be managed through the built-in functions of most integrated library systems (ILS). Generally, no fees are required for regular circulation transactions (lending/borrowing) within a single library.

However, reciprocal resource sharing between libraries requires cooperative yet technical arrangements between external partners before managing any operation and setting workflows. According to the Illinois Administrative Code, “Resource sharing incorporates activities related to automated discovery tools (including bibliographic library databases), collection management, bibliographic description, delivery, interlibrary loan, reciprocal access, and reciprocal borrowing. Resource sharing is a core system service.”

In addition, a consortium of libraries can engage in a shared integrated library system.

Once a library engages in one of the abovementioned management layers and implements the required technical infrastructures, then it must determine the operation management and workflows.

Operations Management Workflows

The definition of operations management in the Blackwell Encyclopedic Dictionary of Operations Management is an all-inclusive standard: “Operations management is the set of tasks that manages the disposition of resources in an organisation engaged in the production of goods & services” (Hilyer, 2013).

In libraries, the common features of resource sharing operations can be described as:

- Requesting materials (physical or digital) that cannot be found in your own library.
- Receiving the request by the concerned department.
- Verifying the validity of the data.
- Looking for potential suppliers.
- Obtaining the materials through the ILL management system.
- Receiving the materials.
- Forwarding the materials to requestors.
- Completing the request through the ILL management system.
- Creating reports for processed materials.

Requests can be unfilled if the material is not found, and/or cancelled if the requestor cancels the request.

- Requesting materials in a traditional framework allows users to search their own library catalogue and when the material is not found, ask the interlibrary loan librarian to provide the materials. Libraries used to rely on their own collections as a primary source for meeting a user’s requests. But with time and evolving needs, libraries started to accept that their own collections cannot meet all of the needs of their users, and that new ways needed to emerge. With time, union catalogues emerged and OCLC led a revolution in resource sharing, with materials transmitted electronically through WorldShare, ILLiad, Article Exchange, etc. Interlibrary loan standards such as the ISO ILL also emerged.

- Requests are received by the resource sharing department through email, a resource sharing service, or through any automated system. The resource sharing librarian verifies the citation, ensures the library does not have the material requested, and proceeds to look for potential suppliers. Suppliers can be local partners, universities, and specialised institutions (e.g., British Library On Demand, SUBITO, National or Public Libraries, University Libraries, etc.) with which the library has made an agreement. There are some national agreements such as Libraries Very Interested in Sharing (LVIS) on OCLC WorldShare ILL, where libraries provide article and book loans free of charge.
- Once the request is made, the borrowing library determines whether it can be delivered, and what factors can cause non-delivery (e.g., costs, wrong citations, incomplete citations, etc.). If the request cannot be filled, the resource sharing librarian searches for other suppliers until the material is found.
- Depending on the ease of finding the materials requested, it generally takes between 24 and 48 hours to receive the materials from the lending library. The delivery methods vary and may be email or FTP, which is the most recommended secure option among some publishers. Some of the most used forms of digital delivery include Ariel (during the 1990s), Odyssey (primarily Academic Libraries), and Article Exchange.
- Librarians send an email notification to the user, and materials are then delivered through a safe electronic transmission system that can be hosted on a server and accessible using credentials. The best practice is not to send digital files as attachments because doing so may violate copyright. Another option is to deliver by hand (depending on the copyright restrictions). This completes delivery for digital documents and copies. For a physical item, the requester is informed to pick up the item from the library. The item is checked out through the library management system by the borrowing library upon pickup. Once the user has returned the material, the item is checked in and sent back to the lending library through the postal service, courier, or commercial shipment company.
- Once the process is completed, the resource sharing librarian updates the software, and statistical reports can be generated as to the number of initiated requests, filled requests, cancelled requests, etc.
- Cancelled or unfilled requests occur when the resource sharing librarian cannot find the material (for example, when the material is out of stock), the material is available locally, or the requestor cancels the request.

Challenges

Although resource sharing serves large communities and institutions, it also faces many challenges due to several technological and human factors. The major challenges include those listed below:

- Fluctuating demand: Resource sharing throughout the years has encountered unpredictable demands that can be overwhelming to manage, with demand decreasing during various cycles. Therefore, libraries need to meet the high expectations of patrons and keep improving their systems to meet those expectations.
- The rising costs of some publications hinder low-budget institutions. This is where it's evident that consortia play an important role in helping to share materials at low cost or no cost.
- Copyright and electronic licensing issues have a strong impact on resource sharing operations, where in many cases articles still must be printed and delivered to requestors rather than transmitted electronically (via ILLiad, Odyssey, Article Exchange, etc.). The turnaround time increases when copyright or licence restrictions require printing and shipping instead of digital delivery. This highlights the importance of negotiations with publishers to move away from those restrictions to allow broader use of the resources by member institutions, and to maintain access to the resources when the paper subscription is dropped.
- Cataloguing practices by libraries that fail to keep OCLC up to date slow the resource sharing librarian looking for the material in the OCLC WorldCat catalogue. It has been recommended to remove the library symbol from any missing or withdrawn materials to expedite the process (Beaubien, 2006).
- Rapid changes in technology and the technological choices available can impact resource sharing services, as librarians should stay aware of trends, new software, and systems. Changing from one system to another is a long process that impacts resource sharing operations.
- Audio-visual lending in most libraries cannot be requested through resource sharing due to the licensing limitations, and this is where negotiating with publishers becomes crucial.
- eBook resource sharing provides many challenges to professionals and users. This includes evaluating lending needs and purchasing options to meet the needs of the library's community.

COVID-19 Challenges

The limitations of the resource sharing systems and operations were made evident by the lockdown that the COVID-19 pandemic imposed on libraries. This unexpected worldwide crisis highlighted the limitations of networks where operations stopped during the closure of libraries. Libraries' ability to fulfil requests for physical books and scan chapters or pages from physical

items was interrupted. It became obvious that it was necessary to go beyond the traditional processes to face the current challenges.

This is where the IFLA-DDRS committee intervened quickly to support libraries in their resource sharing operations and initiated the RSCVD initiative, where any library in the world could request an article through a common platform and volunteering libraries supported the speculative requests, as described in Chapter 1.

Skills

It was evident that through the years with the increase in resource sharing requests, the change in users' expectations, and the fast development of technology, resource sharing librarians had to embrace this change and develop new sets of skills. In addition, volunteering in resource sharing is very important to the resource sharing community. Librarians and libraries took part in volunteering initiatives such as those described in RSCVD and positively impacted resource sharing communities across the world.

Some requested material can be too old to be protected by copyright law, such as some reports, governmental papers, newsletters, dissertations, and theses, but these could be easily found since resource sharing librarians would go beyond the traditional request and find the information on the internet. This is an example of resource sharing librarians shifting their skills to more reference work and patron instruction in bibliographic resources (Beaubien, 2006).

The traditional norms and values (physically sending items) were not up to the task. The new norms and values (electronically sending items) had a positive impact on libraries worldwide and changed the logistic and supply chain management. Resource sharing professionals had to build a new set of skills to go along with this change.

The evolving skills a resource sharing librarian should have include but are not limited to:

- Knowledge of copyright laws in one's own country and a broad view on those of other countries and document suppliers. This impacts the determination of which supplier to ask for a particular request.
- Knowledge of licensing agreements between libraries or consortia and vendors. This helps in negotiating licences with suppliers.
- Knowledge of technology and systems will help the resource sharing librarian provide quick, effective service to patrons. Using interlibrary loan management systems or independent systems makes resource sharing operations integrated, fast, and accurate.
- Strong customer service skills are crucial when assisting patrons and those with special library needs. Library users may have difficult, singular needs, and strong customer service skills are the priority throughout the entire process.

- Searching expertise where the resource sharing librarian has the responsibility to provide the materials requested to users at low or no cost, quickly and accurately. Therefore, the resource sharing librarian must know search tips, resources, and databases, in very much the same way as someone in a reference librarian role.
- Teaching skills. The resource sharing librarian should help patrons look for data, saving them time, and should help them better understand how to use the resource sharing software and scanners, understand copyright law, etc.
- Continuing education is important to be able to meet the evolving technology demands of the job. Therefore, tracking professional listservs, meetings, and conferences, along with building relationships with librarians and library professionals, is essential.
- Assessment of one's own processes should be done regularly to ensure the best quality, speed, and price. Benchmarking with other libraries needs to be done (RUSA Stars, 2013).

Training Needs

Since the resource sharing concept is evolving, resource sharing professionals should thrive in the fast-growing information economy by enhancing their career development and by passing along those skills to researchers and all stakeholders who should be part of the technological revolution. Resource sharing professionals need to train and to be trained on how to use those skills. Lots of choices are offered below:

- Training sessions organised by the IFLA-DDRS, ALA groups, consortia, and librarian workshops.
- Online courses specifically designed for librarians, such as the University of Wisconsin-Madison's I-course, which offers a wide range of training throughout the year.
- OCLC's WebJunction platform offers a wide range of webinars, and courses to librarians (<https://webjunction.org>).
- Library 2.0 recordings and mini-conferences that help librarians evolve and assess their current skills (<https://library20.com>).

Resource sharing professionals should also raise awareness about the many tools that allow free access to materials, such as the open access environment and free databases upon which they rely. Some of the trainings they can offer:

- Understanding better the use of the tools that are specific to one's own university or library. This can be a shortcut to success in a resource sharing workflow.

- The use of international software for resource sharing requests. (The DDRS-IFLA is currently developing a new tool.)
- How to formulate a query using search operators.
- Understanding copyright law and regulations from the user's side to be aware of the rights and limitations while requesting materials.
- Understanding open access and international resource sharing.
- Any training can be designed by resource sharing professionals according to the needs they observe.

So where are we going?

Future Considerations

Resource sharing professionals constantly aim to improve operations, to increase user's satisfaction, to decrease fees, and to speed up the turnaround time. As an answer to the devastating worldwide consequences created by COVID-19, it was time to go beyond the traditional and local processes and redesign a global solution. What did we learn?

Consortia agreements are great tools to share, speed up deliveries and decrease prices, but are limited to only local and regional partners, leaving other entities behind.

Global collaboration that is enhanced by volunteering proved to be effective for resource sharing operations and empowered the resource sharing network worldwide.

Technology revolutionised resource sharing processes but proved its limitations when lockdown was imposed.

What we need is to:

- Create a common vision among librarians worldwide that will unify the resource sharing language and help shift our thinking to move beyond local trends.
- Agree on common and standardised guidelines to override local policies and practices.
- Put the patron first as the main priority and focus on answering their needs with best practices.
- Become trainers with strong customer service skills to help patrons utilise the tools and to make the resource sharing processes more transparent.
- Explore and migrate resource sharing operations to cloud computing technology in order to grow in scale and worldwide impact.

- Explore the role of social media in resource sharing operations and where it may help libraries decrease delivery costs.
- Advocate for open access by lobbying and negotiating with publishers the deals that will impact resource sharing operations.
- Become more knowledgeable about copyright laws locally and internationally.

One cannot deny the devastating impact COVID-19 had on the world, but also how it has positively impacted resource sharing professionals who started to look closely at the limitations resulting from lockdowns and answered those limitations by redesigning their operations to provide instant, free resources to researchers, thus contributing to the advancement of knowledge.

Glossary

Application programming Interface (API): A set of rules that enable an application to communicate with another application. APIs are often used to share contents.

Discovery tool: A database, finding aid, index, or other resource used to find information.

Document Delivery Services (DDS): In information retrieval systems, the provision of documents, published or unpublished, in hard copy, microfilm or electronic format, at an established cost upon request. The delivery of requested documents from the library collection in physical form to the office or residence of library users or in electronic form via email.

File Transfer Protocol (FTP): A computer application used in the late 20th and early 21st centuries to transfer files from one computer to another over a local area network (LAN) or a wide area network (WAN) such as the internet.

Intellectual property: Tangible products entitled to the legal status of personal property, in particular works protected under copyright, registered trademarks, and patented inventions.

Integrated Library System (ILS): A software system for the storage and management of library services and resources. The software often contains modules for cataloguing, circulation, acquisitions, and serials, along with a user interface (OPAC) to retrieve and manage information contained within.

Interlibrary Loan (ILL): A transaction in which, upon request, one library lends an item from its collection, or furnishes a copy of the item, to another library not under the same administration or on the same campus.

Library consortium: A formal association of libraries, usually restricted to a geographical area, set number of libraries, type of library, or subject interest, that is established to develop and implement resource sharing among the members and thereby improve the services and resources available to their respective target groups.

Licensing: The process of negotiating and signing a licence agreement.

Metadata: Information used to describe a work, to enable discovery and use. There are three main types of metadata used to describe various aspects of data: administrative metadata, descriptive metadata, and structural metadata.

Open access: Pertaining to scholarly material that is made available online without charge to the user.

Resource sharing: A term covering a variety of organisations and activities engaged in jointly by a group of libraries for the purposes of improving services and/or cutting costs. Resource sharing may be established by informal or formal agreement or by contract and may operate locally, regionally, nationally, or internationally. The resources shared may be collections, bibliographic data, personnel, planning activities, etc. Formal organisations for resource sharing may be called bibliographic utilities, cooperative systems, consortia, networks, bibliographic service centres, etc.

Satellite libraries: Libraries that are adjuncts to a principal library. In law firms, they can vary in size from a bookcase in a hallway to a full-sized library. Satellite libraries may be in the same building as the central library, or they may be in a different city or even country.

Supply chain management: The management of the flow of goods and services between businesses and locations, including the movement and storage of raw materials, of work-in-process inventory, and of finished goods as well as end-to-end order fulfilment from point of origin to point of consumption. Interconnected, interrelated, or interlinked networks, channels and node businesses combine in the provision of products and services required by end customers in a supply chain.

Union catalogue: A catalogue of the collections of all the libraries of a library system, with indication by means of location marks of the libraries in which a given bibliographic item may be found.

Conclusion

In this document, we have endeavoured to present a portrait of global resource sharing in the 21st century, as what was once deemed to be an afterthought in library operations is now considered a vital component in supplementing our collections and fulfilling the research, educational, and informational needs of our communities. Indeed, during the most restrictive lockdowns associated with the COVID-19 pandemic, resource sharing was one of the few library services that continued to operate, offering a lifeline to patrons and connecting the world when we were at our most isolated. Even as technology continues to transform our library systems and collections, the need for libraries to be able to share with one another amid all of this change will remain constant.

The shift from physical to digital collections presents many challenges and opportunities for resource sharing practitioners. On the one hand, digital materials are easier to share in theory — sometimes with the push of a button — but at the same time, publishers and other content providers have tried to discourage this sharing in favour of greater profits for their shareholders. Libraries must negotiate for licences that allow them to lend electronic materials; at the same time, they must advocate for laws at the local, regional, and national levels that protect lending rights in the face of overly restrictive licences. It is also of critical importance that libraries explore the transformative potential of new technologies to enhance traditional library collections with such innovative services as Controlled Digital Lending.

Because libraries can vary significantly in their organisation, it is difficult to describe the Platonic ideal of a resource sharing “shop.” However, it is safe to observe that despite the structural differences, every resource sharing operation relies on finding the correct balance of technical innovation and human ingenuity. Although the introduction of ever more efficient automation makes certain aspects of our work simpler and more straightforward, the sheer complexity of new formats, fulfilment systems, and issues of licensing and law requires a level of sophistication and nuance as well. Resource sharing will always be as much of a library art as it is a library science!

Even as humanity continues to wrestle with the effects of the COVID-19 pandemic, the geopolitical catastrophe unfolding in Ukraine reminds us that the challenges facing librarianship will always be profoundly shaped by the world around us. We are part of an interconnected whole, and how we respond collectively to future adversity depends on our willingness to engage with one another in times of great need. In this way, resource sharing speaks to our highest ideals as a profession. We hope that in the course of this publication, we have contributed to these ideals by sharing our knowledge and expertise with you, the reader and fellow resource sharing practitioner.