Access versus Ownership of Information and DESIDOC's Balancing Act

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ABSTRACT

Under Open Data policy of the Government of India, the Indian research organisations playing a vital role in making unrestricted data sharable in the open domain. Organisations are facilitating the access to data by civil sectors for its potential reuse, repurposing and empowerment of the society. In this endeavour, the Defence Research and Development Organisation (DRDO) of the Ministry of Defence of India, is contributing immensely by making research data available for the economic and social value to the society. The paper is an attempt to discuss opportunities and challenges of the data revolution, from ownership to access and the role of DRDO's scientific community in making unrestricted data available for sharing, reuse and re-purposing by the civil sector; and, how data revolution can be exploited to improve own knowledge and benefit to society through data-driven research and innovation.

Keywords: Information access, ownership of information, DRDO, DESIDOC, India

1 INTRODUCTION

As rightly said by Shri Narendra Modi, Prime Minister of India that, 'Every institution has to evolve in tune with the times, no institution can remain static. Changes are inevitable in tune with the times. There is a need to change the way we think'[1]. In the modern world, libraries and ICT services play a key role and as such, the system of governance required to be modified in order to address the fundamental issues that have emerged as a result. Due to technology adoption, the world has become interlinked and innovation happening globally, the only way to stay on top of trends is to constantly research the best practices and global requirements. A library reflects its role in social, cultural, economic and scientific development of a nation. It builds resources, develops services, preserves and provides access to the information, which is growing exponentially. The technology for use by libraries is also advancing in great deal day-by-day. These advances have brought out lot of changes in the role of librarians in terms of collection development, acquisition, preservation, access and delivery. ICT has also played a major role in this development and access scenario. Hence, there is a debate among those who advocate importance of ownership to those believing and giving more importance to access to information.

Access versus ownership is an issue, which has come to the fore in the library world over the past few decades. The access versus ownership debate is all about change. Over the time libraries evolve from warehouses of information/collection to providers of access to information/collection and similarly views librarians has changed from information collectors to information managers. But still librarian's problem is plenty in dealing with universe of knowledge[2].

- Availability of too many information sources
- Limited access available information due to lack of human assistance and funds
- Ownership of scholarly literature is getting expensive and the same time free access of quality literature is limited.
- Libraries need to provide access to more resources than ever before
- Libraries are spending more on content, but at the same time acquiring less
- Libraries want more full-text resources- but security of print
- Users want 24/7 access to resources-preferably remote.

1.1 Ownership Scenario

Ownership as defined by Oxford Dictionary, 'legal right of possession; property, proprietorship, dominion'. Ownership involves three legal rights: the right to exclude; the right to do whatever you want or to prevent others from doing certain things with the items owned; and

the right to preserve. Ownership in the library context pertains to the physical item, not the rights to its content. However, for R&D libraries, the right to select items for their collections, the right to use them, and the right to preserve them so that they are available over the long term, are essential to support research and scholarship[3]. The reality that ownership was the only practical means to provide access to most material meant that in the process of serving current needs.[4] If one looks at the scenario of ownership but without access to information, then the library can't serve the information needs of its readers. If a library wants to depend only on ownership then it has to:

(a) purchase all collection which include books, journals, databases in all available formats, (b) involve in massive digitisation process, (c) develop databases, technology, and supporting infrastructure development, and so on which can potentially lead to many major constraints; some broad ones are as follows:

• Library can't afford to subscribe all needed journals, books, reports, proceedings, etc.

• Rise of number of journals/books and other material[5]

• Limited library budget and space[5]

• Monopoly of some publishers and escalating the cost every year

• Publisher mergers lead to higher prices as competition decreases

• Limited manpower to handle all the subscribed resources

• Specific as well as general information needs of users

• Availability of information in various formats

• Requirement of users for different formats as well as different platform (compatibility issues)

• Difficulty in maintenance and complaints from patrons[5]

• Pressure from scientists/users to access to critically important journal literature

• Too much development cost for in-house databases.

As the results indicate, non–ownership is the current state of affairs for an ever-growing percentage of licensed digital resources and collections acquired by R&D libraries; perpetual access of digital content and at the same time digital rights on access of contents is hampering persistent access to and use of the content. As Adrienne Muir notes, '[i]f libraries do not physically own digital material, they cannot preserve it because this requires physical intervention' and the new 'access rather than ownership model [raises] the question of responsibility for preservation'[6].

1.2   Access Scenario

In context of libraries, access broadly means: Bibliographic access where user get knowledge of information's existence; Physical access - actual possession of that information thru ownership; and Access thru shared ownership by combining access and ownership. In a total access scenario where there will be no books and no print formats, and libraries will solely depend on other sources for their survival there going to be problems as well. Due to following reasons[5]:

• Too much dependence of one library on other libraries/ publishers capabilities and also many libraries on one library

• Possible delays in delivery of sources and services and waiting on part of users

• Speed of access and elimination of browsing

• No browsing of book stacks

• One library catering too many libraries (documents might be already issued)

• Double payment by the patrons for all information— membership fee and printing fee/searching fee

• Photocopying charges vs article purchase charges

• Pay for multiple copies of same articles

• No backup of already paid sources/services

• Publishers/libraries may increase the charges anytime

• Non availability of specific resources catering to specific needs

There is a perception that information will be electronically accessible from home computers, and librarians will no longer be needed. But, the librarians play a role in information collection, evaluation of resources, access to information and the medium through which the information can be disseminated. It is also not possible for the libraries to own everything. They have to seek access and network with other resources and if access to information is not provided then a library is not serving its purpose. Some of the ways to deal with such situations are:

(i)   Document delivery service,

(ii) Inter-library Loan,

(iii) Subscription of databases,

(iv) Rely on 'big deals' and consortia discount, and

(v) Open access to books and journals.

Kane has advocated the idea of access and ownership of information instead of access versus ownership to serve the patrons that will save the libraries from certain extinction.[3] Further, Levine-Clark has rightly pointed out that in near future 'libraries will have banded together to develop more efficient collaborative collection development decisions, making it more likely that a broad range of

titles is intentionally secured for the future. At the same time, libraries will work together to develop strategies and tools that enable the collective preservation of the cultural record''[5].

2. ABOUT DESIDOC

Defence Scientific Information and Documentation Centre (DESIDOC) which is among 52 research labs/ establishments of Defence Research & Development Organisation (DRDO) is the sole agency engaged in the dissemination of information and knowledge to the DRDO's scientific community and civil society. In DRDO, DESIDOC acts as a science and society interface and plays a very important role in promoting S&T, and bringing public awareness and understanding of science in the scientific and civil society. The vision of DESIDOC is to provide essential science and technical research, development information rapidly, accurately and reliably to support DRDO's scientists' needs and in this effort DESIDOC is evolving continuously to keep pace with the ever changing technology landscape and the revolutionary needs of the DRDO[7].

The mission of DESIDOC is to establish an integrated resource centre and state-of-the-art information management system encompassing knowledge centre, publications, e-services, print and multi-media services and to collaborate with national and international institutions/academia/ organizations for cooperative partnerships to improve upon quality of sources and services. DRDO's scientists in excess to 5000 are working on various defence-related projects. With such specialised needs, specialist librarians in DESIDOC who understand, analyse and search, are delivering the required information to them in the most timely and precise manner. They have scholarly aptitude and ICT know-how as they have to increasingly deal with the digital information; search and delivery mechanisms and customisation of databases for faster and easy retrieval of information. DESIDOC is working on all sorts of modern information technologies to facilitate increased information delivery to its user. Also make e-information more generally, readily, and flexibly accessible to their users for cost effectiveness and time saving. Achieve a delicate balance between access and ownership.

2.2 Knowledge Access Activities of DESIDOC for DRDO

DESIDOC has embraced advanced technologies, and contributing in building knowledge capacity, knowledge capital and knowledge economy of DRDO and country at large. It plays the role of knowledge manager who captures, develops, shares the organisational knowledge to achieve organisational objectives. It thinks like a customer, and embed his feelings into its product/and services; and, in line with its vision, information is rapidly, accurately and reliably delivered. DESIDOC has taken many initiatives to provide access to information

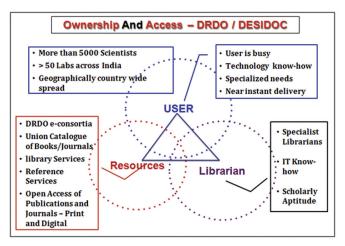to its users. Fig. 1 depicts the Ownership and access scenario by DESIDOC.

Figure 1. Ownership and access scenario--DRDO/DESIDOC

2.3 Information Collection and Services

DESIDOC is under few institutions in India, which is having policies or even codified practices for preserving 'born–digital' and 'converted–to–digital materials'. A library based solely on access has many obstacles and is also vulnerable to failures if based solely on ownership only. To avoid this downside consequence, DESIDOC which has a very large collection of its own books it also in collaboration with external sources access information and deliver. Some of the knowledge sources and services of DESIDOC[7] are:

• **Library Collection-** More than 70,000 books and 1,00,000 bound volumes of journals, and access of 3000+ periodicals

• **Knowledge Repository**- consisting of 28,000+ technical reports published by DRDO scientists

• **Institutional Repository**- consisting of 7,000+ research papers, orations and articles published by DRDO scientists.

• **DRDO e-consortium**- DESIDOC established DRDO E-Journals service under a consortium for providing online access to about 550 e-journals to all the DRDO labs/establishments covering 10 publishers : American Chemical Society; American Institute of Aeronautics and Astronautics; Association of Computing Machinery; American Society of Mechanical Engineers; Elsevier; IEL Digital Library; Jane's; Nature Publishing; Science Magazine; Taylor and Francis. One service provider to access all theses journals, JCCC service is also available to all the DRDO labs. Remote Access extended is extended apart from IP-based access.

• **Databases Services**- Access to large number of databases: IEEE, SPIE, NTIS (NASA, NACA, RAND, etc) bibliographic databases, ASTM, etc.

• **Union Catalogue of Books/Journals**- DESIDOC has

developed a union catalogues of books and journals to let the scientists know about the holdings of all the DRDO labs

- **Library and Information Services**- DESIDOC is providing a large number of services to its scientists. Some of them are: Infowatch Service (fortnightly), Newspaper Clipping Service (daily service covering Defence, DRDO, S&T related news), Translation Service (on demand), Drop Box Initiative, Reference Services, Electronic Books, Video Magazine (monthly), and Photo Bank etc. International Conferences in Military Science & Technology - provide information on National and International events in defence science and related areas to DRDO scientists. It is available at DRDO website and Inranet.

- **Access from other Resource**- DESIDOC is dedicated to meet the varied needs of user communities in DRDO and civil society. Membership of DELNET and other similar agencies. It brings knowledge to life with intuitive user interfaces and enhanced discoverability for journals and reference work from other resources also.

2.4 DESIDOC's Role for Information Access for All

Believing that the measure of the impact of researches is not the returns to the individuals, but the returns to the society, DESIDOC fulfils its responsibility in the national effort of creating common repositories of sharable data /research and information.

- **Organising Conferences**- DESIDOC collaborates with academicians, scientists, researchers, librarians, and scholars to popularize S&T through literary pursuit and by organising and sponsoring conferences in the country.

- **National Digital Library**- DESIDOC is also contributing in the 'National Digital Library' mission.

- **National Data Sharing and Accessibility Policy**- DRDO has mega research and development projects which generate a mammoth amount of intellectual output. Research data, scientific and research papers, articles, essays, project reports, annual reports, patents. DRDO Scientists persue PhD and Masters Degree which also generates dissertation and thesis. Under the 'National Data Sharing and Accessibility Policy', DESIDOC is providing access to the unrestricted data for their potential value to be fully realised.

- **Publishing DRDO Monographs**[8]- Started in 1994. DRDO retired scientists write monographs in the areas of their expertise. A monograph is aimed to benefit DRDO scientists, students, researchers, and academicians. Till date 36 monographs have been published. Few Monographs are free accessible in PDF and E-pub format.

- **Open Access of Publications and Journals**[9-10] (Print and Digital)- DESIDOC has pursued the academic pursuit of DRDO through in-house publications, and literary work. It is regularly publishing large number of books and journals which are available either in abstract form or full text as open access.

- ***Defence Science Journal***- First published in 1949, is a peer-reviewed, open access, bi-monthly research journal in the area of defence science, engineering and technology. More than 3,000 articles have been published till date and all are freely accessible.

- ***Defence Life Science Journal***- This journal caters to the needs of Life Science scientists. Its first issue was released on 29 May 2016.

- ***DESIDOC Journal of Library & Information Technology*** - First published in 1981, is a bi-monthly, peer reviewed, open access journal in the field of Library and Information Science. More than 1,000 articles have been published till date and all are freely accessible.

- **DRDO Newsletter**– a monthly newsletter that publishes events, visits, technology demonstrations; and achievements of DRDO labs. It endeavors to communicate achievements, policies and activities of the organisation. All are freely accessible at DRDO website.

- **DRDO Samachar**- is the Hindi version of DRDO Newletter; published monthly. All are freely accessible at DRDO website.

- **Technology Focus**- covers products, processes, systems and technologies developed by DRDO. The magazine is available at DRDO website. All issues are available in pdf and since Jan 2016 all issues of TF are available in the e-book format also. All are freely accessible at DRDO website.

- **Prodyogiki vishesh** - is a Hindi version of Technology Focus. It is published quarterly. All are freely accessible at DRDO website.

3. DESIDOC'S FUTURE ROLE

DESIDOC embracing advanced technologies to provide library and information services on emerging digital platforms. Developing better infrastructure with scalability and upwards technology integration. Digital imprint of DRDO to connect with the scientific and civil society through online community networking. Building a 'single window' facilitation in areas of design, print, multi-media and network services.

'Data citation' is another step where research is rapidly moving from an era of data scarcity, to one of abundance, in which an unprecedented deluge of data offers major opportunities and profound challenge. DESIDOC is exploiting this phenomenon of the data explosion by making research data sharable for re-use and re-purposing.

DESIDOC has leveraged the power of digitisation

in empowering its users and patrons to contribute in the national mission of open data, on behalf of DRDO is contributing in the national mission of 'Open Data' by providing access to its unrestricted sharable data/ researches and information to the public and world at large. It is contributing in the 'National Digital Library' (NDL) and National Data Sharing and Accessibility Policy (NDSAP) and exploiting the phenomenon of data explosion by making research data sharable for re-use and re-purposing. The data sets provided by DRDO vary in nature and have wide coverage from technological details of products developed by DRDO to HRM. The end user can download the data sets either in XML, XSL, CSV, JSON, JSONP, and ODS format for exploitation with visual representation. DESIDOC is known for its literary and academic work and among a very few scientific documentation centres in the country.

4. CONCLUSIONS

It is time to put aside access versus ownership and concentrate on access and ownership and access strategies will continue to be enhancements of or supplements to ownership[11-12]. Users requirements play a decisive role in access and ownership of information for libraries. Libraries will continue to purchase materials or resources which are in high demand and for materials or resources in moderate or low demand, libraries will purchase access to the information from full-text e-databases. Libraries in future need to work towards shared ownership over electronic resources for cost-efficiency.

Undoubtedly, there is a declining trend the world over as fewer and fewer people are visiting libraries. The libraries have to re-think, innovate and evolve. 'Libraries will continue to exist as long as there are people. It is therefore important to distinguish between those who read online and those who go to reading rooms for that both ownership and access to information have to co-exist. There is need of balancing Act –Information owned and information accessed to become partners – to supplement and build on one another'[5]. The future of libraries will depend on effectiveness of services not on the ownership of collection they hold with user satisfaction is pivot to endeavours in this direction.

As Richard De Gennaro rightly said that 'research libraries in the next decade or two are going to be evolving very rapidly towards new paradigm where it's not just what you own in any particular library, but it's what your library is able to provide access to.' He stated, 'This evolution toward making access rather than ownership the priority calls for increased cooperation between libraries'[12-13]. The successful library of the future will consist of a delicate balance between materials that are owned and those that are accessed. The quality of these future libraries will not be determined by size but, rather, by how effectively they fulfill the needs of the patron[13]. DESIDOC has been engaged in developing knowledge collection and innovative products for scientists. These

efforts are supplemented with the provision of access to information from external resources and building consortia. It is the need of the hour that organisations like DESIDOC work together and collaborate for better technologies and improved infrastructure with scalability and upwards technological assimilation.

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