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DRDO E-Journals Consortium

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ABSTRACT

The prohibitive cost of library material, especially foreign journals, pertaining to science and technology, has always been a bane of information centres, especially in the developing countries, taking away large chunk of their meager resources and therefore always a hindrance to provide better services to the users. Libraries tried to bridge this gap by borrowing and inter lending required documents among themselves. Advances in information and communication technology (ICT) have changed the publication scenario as well as the mode of resource sharing due to availability of e-journals and online resources. Rise in number of personal computers, Internet, and networks (LAN, MAN and WANs) besides augmenting the availability of the material increased the speed with which the information is now accessible. ICT also facilitated the establishment of library consortia for maintaining information resources together. In India, during the last few years, many leading scientific and technical organisations have established consortia to share their human and electronic resources. This paper briefly discusses the consortia initiatives taken at Defence Research and Development Organisation (DRDO), a premier research organisation of Ministry of Defence, engaged in the indigenous development of cutting-edge defence technologies.

Keywords: DRDO, DESIDOC, library consortia, e-journals, science and technology, information explosion, information and communication technology

1. INTRODUCTION

Defence Research and Development Organisation (DRDO), Ministry of Defence, Government of India, is the largest government-funded research and development organisation in India with a chain of over 50 laboratories (Fig. 1) and establishments spread across the country. It is engaged in carrying out research and development of cutting-edge technologies for protecting the frontiers of the country. The vision of DRDO is to make India prosperous by establishing world class science and technology base and provide our Defence Services decisive edge by equipping them with internationally competitive systems and solutions. DRDO's mission is to design, develop and lead to production state-of-the-art, sensors, weapon systems, platforms and allied equipment for our Defence Services. It endeavours to develop infrastructure, committed quality manpower and a strong technology base in the country for self-reliance in critical defence technologies and systems by indigenisation and innovation while equipping the armed forces with state-of-the-art weapon systems and equipment.

DRDO has about 7000 active R&D scientists, actively supported by technical and supporting staff. Over the years DRDO has developed a number of products, systems and technologies encompassing aeronautics, armaments, combat engineering, electronics, materials, life sciences, naval systems, and so on. Some of these products include missiles like Prithvi, Dhanush, Akash, Nag, Brahmos, and technology demonstrator Agni; main battle tank Arjun, radars, sonars, torpedos, and various other allied systems many of which have spin-off benefits in civilian sector also. DRDO's research output in terms of publications compares well with the other leading scientific institutions of the country. DRDO's innovations and its core competency in knowledge development are functionally access-dependent to latest developments in science and technology by its R&D scientific community.

2. LIBRARY CONSORTIA

In the modern information-based society, the user community has been demanding pinpointed, exhaustive and expeditious information. To cater the information needs of the researchers, libraries require facilitating

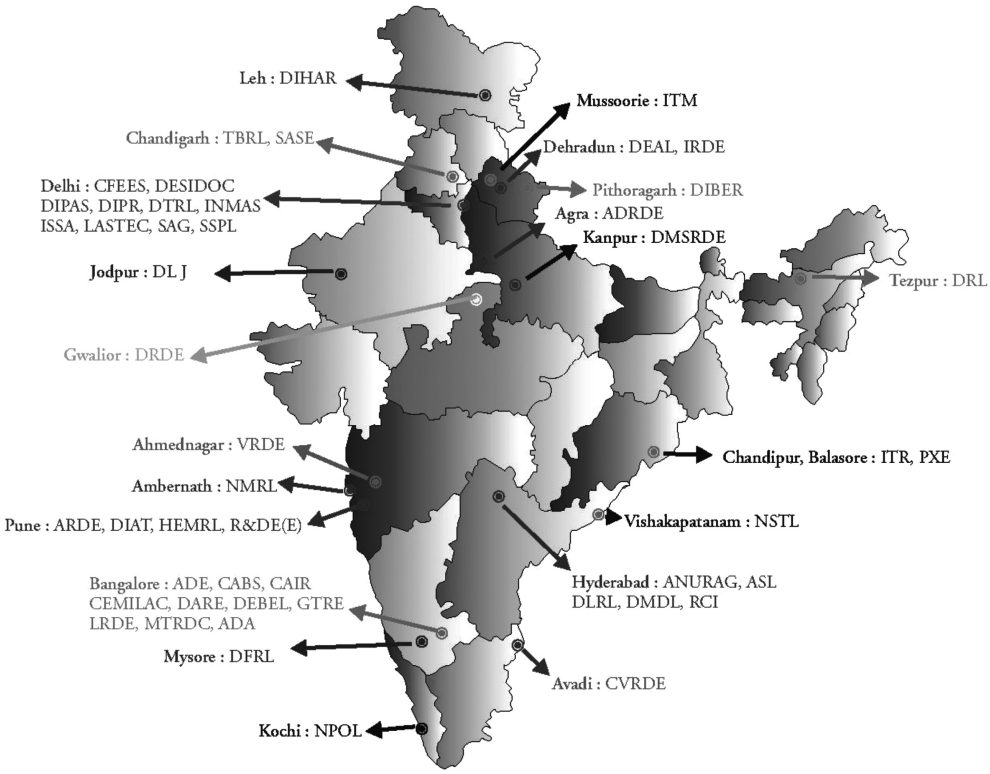

Figure 1. Various DRDO laboratories/establishments.

accessibility to a variety of information resources particularly the digital information in addition to the print documents. The library and information professionals are facing the problem of satisfying the high degree of users' demands encompassing multidiscipline with the limited financial resources to procure the multidimensional formats of the documents. To solve this problem more effectively, the librarians have been urged to adopt the philosophies and technologies such as procurement of digital content. The digital world is characterised by access to information rather than holding the information. The buzzword of present day digital environment is 'Consortium' that is intended to share the resources through collaboration within the member libraries. This facilitates the researchers to acquire information quickly at a rate at which changes occur in the electronic environment.

Journals are a vital source of information for the scientific research and development. The number of periodicals at present is estimated to be ~250,000. Of these, ~25,000 are scientific, technical and medical journals. Approximately 15,000 are refereed scholarly periodicals, and ~12,000 of the refereed scholarly periodicals are available online. Obviously, no single library can afford to procure all journals even in a single discipline. With the emergence of IT applications, particularly Internet, there has been a major shift from traditional print journals to electronic journals (e-journals) in view of many advantages of the latter, i.e., fast, easy, 'anywhere-anytime' accessibility, share ability, hyperlinks to related text, cost-effectiveness and obviation of the storage problem encountered in the case of print journals. As a result, the numbers of e-journals is fast growing and at present ~15,000 journals are available in S&T areas alone.

In recent times a group of homogeneous institutions having a common focus (for example, higher education) or of same organisation, for example, Council of Scientific and Industrial Research are coming together to establish consortium for accessing online content. A consortium represents a new definition and scope of resource sharing among a group of participating libraries. Consortium may be defined as two or more institutions or organisations that have formally agreed to cooperate or consolidate certain functions to achieve mutual objectives. A consortium may be formed on local, regional, functional, or on subject basis. Libraries all over the globe are coming together to form consortia taking advantages of the path breaking developments in information, communication and networking technologies with the objective to promote faster, better and cost-effective means of providing access to the information needed by the users.

A number of consortia are successfully facilitating the research community, both on academic and R&D front. At the international level consortia like Galilio,

OhioLink, TexShare, VIVA and SUNY Connect in USA; CALIS in China; CONCERT in Taiwan and so on are operational for some time now.

2.1 The Indian Scenario

The Indian National Digital Library in Science and Technology (INDEST), All India Council of Technical Education (AICTE) of the Department of Secondary and Higher Education, Ministry of Human Resource and Development provides online access to 182 member institutions covering IITs, central universities and engineering colleges. This is an open ended consortium facilitating educational institutions and provides access to 6,500 journals. IIT, Delhi is the focal point for its management and administration.

Another consortium for the academic community is the UGC-Infonet Digital Library Consortium, Ahmedabad. It is a nation-wide network in partnership with ERNET covering 157 universities under the University Grants Commission (UGC) and providing access to over 5000 S&T journals, databases, etc. It is funded by UGC and administered by INFLIBNET Centre, an inter university establishment of UGC.

While the above two consortia serve primarily the academic community, the CSIR E-Journal Consortium is one of the successful consortia in R&D environment. This is restricted to the institutions of CSIR and DST covering about 56 establishments and providing access to nearly 5000 titles from S&T publishers. It is administered by NISCAIR, New Delhi. The ICMR-ERMED consortium, administered by ICMR and National Medical Library provides access to 555 biomedical journals to all institutions of ICMR; the CeRA Consortium of IARI facilitates institutions under ICAR. In addition, HELLIS Network of Health Universities (Bengaluru) and SpaceNet of ISRO are also extending services to their respective communities.

2.2 HOW CONSORTIA BENEFITS MEMBER INSTITUTIONS?

Consortium is useful for creating a formal structure for active resource sharing to achieve common goals. Collaborative and collective developments take place with in a consortium so that the participating members develop, maintain and provide access to specific collections. Subscriptions through library consortium:

(i) Enhances access to electronic resources including access to non-subscribed periodicals across the organisation and/or institutions; many publishers provide access to back volumes of five or more years.

(ii) Makes it possible to cope up with the ever rising high prices of journals and other publications, increased users, growing user demands and information explosion (while the average annual increase of subscription prices of journals is 10 to 15 per cent, in a consortium it is around 5 per cent, if negotiated for three or more years).

(iii) Provides more facilities at most competitive prices from the publishers of e-publications because of the bargaining power as more institutions are involved,

(iv) Provides wider access to the e-information resources at lower prices (compared to individual subscription prices) and at a mutually beneficial terms and conditions for libraries and publishers.

(v) Helps in meeting the high expectations of researchers in the fast changing technological environment.

(vi) Helps in greater resource sharing amongst the consortium members.

In general, a consortium benefits all members with flexibility in meeting the demands from library users, and economy and effective management of resources. Many scientific organisations in India have recongnised this potential and have established or working towards establishing consortia.

3. DESIDOC'S INITIATIVE

Each DRDO laboratory has an independent and well established library/information centre that is also backed up with strategic information support from Defence Scientific Information and Documentation Centre (DESIDOC), a constituent establishment of DRDO. The total expenditure by the DRDO laboratories towards procurement of journals hovers around 20 crore per annum. Looking the developments in national and international scenario and the success of INDEST-AICTE and CSIR-DST consortia in meeting the multifarious information requirements of their users, it was felt that a similar effort by DRDO would be beneficial to the R&D community who need latest information on their desktops.

With the objectives of providing DRDO S&T personnel global access to the S&T literature through strengthening the facilities for pooling, sharing and electronically accessing the information resources; for facilitating online access to the full text of the journals on 24X7 basis with up-to-date information; and to cope up with the ever increased users as well as growing users demands, DESIDOC in the second half of 2007 took up the task for establishing a mechanism for providing online access on a consortium mode to e-journals across the Organisation. An analysis revealed that over 1600 unique titles were being subscribed by the DRDO laboratories from more

than 400 publishers. Among these, 964 titles were subscribed by only one laboratory, 238 each by two laboratories and 124 each by three laboratories; about 60 titles were highly popular with 10 to 40 laboratories subscribing to these. From these, S&T journals of 25 publishers were short listed based on the number of titles subscribed across DRDO labs. A proposal was submitted in 2008 for subscription of about 770 unique titles covering 18 publishers. A Committee constituted for reviewing the proposal recommended 13 publishers. Request for proposals were invited from all the 13 publishers, but some publishers responded late. Negotiations were held with suppliers of 10 publishers.

The DRDO e-Journal Service came into being with effect from 01 January 2009 covering 448 titles from 7 publishers, namely ACM Digital Library (47 journals, magazines, transactions, etc), ACS (36), AIAA (7), Elsevier Science Direct (195 titles), IEE+IEEE (157 titles plus conferences, standards), Jane's (5), and Science (1). However, due to the limitation of sites available for accessing titles of ACM (5), AIAA (10), Jane's (30), Science (13), and Elsevier Science Direct (access to 195 titles, 8 sites and access to their own subscribed titles in 34 other labs), a content browsing service was felt necessary. J-Gate Custom Content for Consortium (JCCC) Service was added to facilitate access to contents of all the journal titles subscribed by 20 major DRDO labs. JCCC service helps in obtaining a legal copy, by post, of an article required by a user in a laboratory not subscribing the title but is available in another laboratory.

The consortium operates through DESIDOC under a Monitoring Committee comprising members from DRDO HQ and laboratories. A Review Committee, under the chairmanship of Chief Controller (R&D) with an overall responsibility for making policies, negotiates with publishers for promoting the consortium. DESIDOC manages the subscription of all electronic resources for all participating laboratories. A gateway (website) has been developed for different publishers and will be hosted on the DRDO website. The end user will access the e-resources through the gateway instead of browsing different publishers' websites. The gateway will contain the information on authorised list of journals (publishers-wise), an alphabetical list of all the titles with a search facility.

3.1 Options

The Terms and Conditions are based on those of CSIR Consortium. Salient features of the DRDO E-journal Service (DRDO Consortium) as provided by the Licensors are as follows:

- Various options in the Consortium include all the journals to all the laboratories (for example, ACS, IEL), all the journals to selected laboratories (ACM, AIAA), selected journals to all the laboratories (Elsevier), and selected journals to selected laboratories (Jane's, Science).
- Internet Protocol (IP)-enabled access in the labs; where such facility does not exist, the access through login and password.
- Facilities to search, browse, view, and download with an option to download in soft copy or print is allowed.
- In case of any discontinuation or gap the publisher shall inform the reason and the origin of discontinuation/gap.
- The designated users of each DRDO laboratory as well as DESIDOC shall be given access to the publisher's server/database where user statistics is logged into. Licensor shall allow access to download the statistics to two designated staff of each user lab. This access to the designated users of DRDO shall be password regulated. Designated users will have the privilege to download statistics with respect to their labs. In the case of DESIDOC, Licensor will ensure the complete access to usage statistics in respect of all user labs.
- Licensor shall provide usage statistics on monthly basis to DESIDOC (all laboratories data) and also to the respective laboratories (the lab's statistics only). Data shall be provided for each journal-wise, if required.
- All the DRDO employees will be bonafide users and shall be allowed unlimited access, view, search, browse, download, and print required for their use.
- DESIDOC is the Implementing Agency of the consortium.
- Access to the back volumes with a minimum five years base (calendar year) of full text of all the titles shall be provided. In case of non-availability, these should be provided for the available period.
- In the case of termination or on the expiry of the Agreement, the Licensor shall provide the Implementing Agency (DESIDOC) the full text of the e-journals for the period of agreement on the prevalent formats on CD-ROM, DVD, etc., with the retrieval software for network access. The Implementing Agency shall have the right to duplicate and distribute these among various user institutes of DRDO.
- In case of change in archival technology, the state-of-art archival technology shall be made available by the

Licensor at no extra cost for archival of full-text data of e-journals to higher version of technology as and when it arrives.

- The Licensor will conduct training sessions for at least twice in a year in the five zones, namely, New Delhi, Pune, Dehradun, Hyderabad, and Bengaluru at no extra charges.

4. CONCLUSION

DRDO Consortium has been established based on a necessity felt by the Heads of Libraries/Technical Information Centres and discussed in the Meeting held on 12 December 2006. As a new programme, it has already made a positive impact on the minds of the R&D community of DRDO. Many laboratories now are requesting enhancing the coverage of journals by adding publishers like ASME, Emerald, Professional Engineering, Royal Society of Chemistry, Sage, Springer, Taylor-Francis, Wiley, World scientific, etc. On the economics side, DRDO laboratories could save nearly Rs 3 crore by availing of deep discounts offered for print copies and by not subscribing to print copies. There is also a request to include a couple of databases in aeronautics and materials as well as popular standards. Unlike academic consortia where the institutions are all have a common focus, in DRDO each laboratory has a different mandate and focus thus requires a different set of journals. Already DRDO laboratories are having greater resource sharing amongst them and providing increased access to latest R&D developments on 24X7 basis to the S&T community on their desktops with an improved, qualitative and effective article delivery service.

4.1 Need for a National Federation of Library Consortia

However, it is well known that the publishers like to exploit the library community in various ways. Initially many publishers offer online access to the journals subscribed by an institution (or the entire collection of the publishers) on trial basis. Once the R&D community is addicted to the resources, they go for the service. After some period, say 3 or 4 years, supported by the access and downloads data, publishers demand more than the agreed amount as renewal fee. Otherwise how can a publisher offering a particular price for a consortium in an all journals for all laboratories option, demand payment of a certain additional amount towards downloads made from non-subscribed journals by a few laboratories on the plea that the journals were not subscribed by the labs? When in the initial offer itself, the publisher has charged for the whole content for access by all the laboratories, it amounts to unethical and unfair practice.

Consider this: there are two organizations both engaged in R&D. While one publisher charges a particular amount for 10 sites plus the Implementing Agency (a non R&D lab) for 2009. The same publisher charges nearly twice the amount for another organization for the same number of sites (10 plus one non R&D Implementing Agency). The reasoning is that the latter has a larger base of subscriptions and that the charges for the former are based on their base 5 years ago plus annual increase in the prices (at 5 per cent). Same number of journals, same number of sites, same year, but different rates! When questioned, they reply that the rates quoted for an organization are special to them only and not applicable for others. While the prices charged for an item—say a high end computer—of a highly reputed company are same for all institutions in the country (save the marginal discounts offered by dealers), why the same is not applicable in the case of journals—same number of titles for same number of sites for two organizations?

It is well known that most publishers wish to safeguard their total income from all the constituent members of the Consortium. Also, the average subscription prices of journals or the prices charged by commercial publishers are generally more (by a few factors) than the professional society publishers. While the commercial publishers reap huge profits through high prices of journals, the professional society publishers charge moderately. Many commercial publishers simply multiply the amount charged by the number of institutions in spite of the fact that many institutions of an organization are engaged in R&D with differing depths and focuses, professional society publishers charge 10 per cent (some times as little as 5 to 6 per cent) extra on the print revenue from the organization.

Many such aberrations—or unfair practices—are in vogue. This necessitates for creating a National Federation of Library Consortia or Association of Indian Library Consortia with members from each of the Consortia. This can safeguard the interests of all the institutions from various state or central or private sectors. It can negotiate for fair and uniform prices for the services across all the consortia besides checking unduly high pricing. Alternatively, a Central Government agency on the lines of Director General (S&D) can negotiate with each of the publishers to rationalise the prices of online journals for consortia. But the big question is who will bell the cat?

About the Author

Dr A.L. Moorthy is Director, Defence Scientific Information and Documentation Centre (DESIDOC), DRDO, Ministry of Defence. He obtained his MSc in Physics in 1976 and BLISc in 1978, both from Sri Venkateswara University, Tirupati; Associateship in Documentation and Information Science from Documentation Research and Training Centre, ISI, Bengaluru in 1984; and PhD from Karnatak University, Dharwad in 2000. His professional career started at the Satish Dhawan Space Centre, Srihari Kota, ISRO, in January 1979. He joined the Defence Research and Development Oganisation at the Defence Electronics Research Laboratory (DLRL), Hyderabad as Scientist in March 1984. Later he moved to DESIDOC, Delhi in 1987. Dr Moorthy is a Life Member of several professional associations. He has published about 45 papers and edited over 30 books/conference proceedings, special publications, and is also on the Editorial Board of many professional journals. He is recepient of commendation letter from Scientific Adviser to *Raksha Mantri* (1989), ILA-Kaula Best Librarian Award-2008 and ILA-CD Sharma Best Paper Award (2008) from Indian Library Association. His current research interests include open access, intellectual property rights in the digital era, and information retrieval.