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Information Technology in Special Library Environment

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ABSTRACT

The paper outlines the features and impact of information technology (IT) on our society. Specifically it discusses in detail the role played by IT in special library environment. The changing IT environment and matching role of the reference librarian in 21st century has been discussed. As a case study it gives the complete spectrum of impact of IT on Defence Science Library (DSL), a specialised central library of DRDO functioning at DESIDOC. It discusses in detail the various library activities and services where DSL is making effective use of IT to provide better and enhanced services to its users.

1. INTRODUCTION

Information technology (IT) that will shape the future information world is the fusion of computers and telecommunications technologies. Computers process information and telecommunication technology disseminate information. Development of more powerful computers with new methods of information processing, computer networks, and integrated communication systems are of great relevance to the 21st century as these are basic and important information technologies responsible to bring drastic changes in our so called information society of tomorrow. If we look back in the history we find the roots of today's information technology. Improvements in the efficiency of information management has felt long back since the start of the intelligent life of mankind and has led to incredible innovations. Alexander Graham Bell invented the telephone, Charles Babbage invented a machine that eventually developed into today's computer and William Burt invented the typewriter. Bell, Babbage and Burt invented indigenous machines to improve the management of information. They were the pioneers of telecommunications, data processing and office automation. These inventions are the basis of today's IT.

Information technology has a wider meaning for information specialists which include in addition technologies like, repro-micrographic technology, technical communication technologies, and database creation and use. As IT plays a major role in the management of information, by the application of it the modern technological developments are being exploited to record, process, store, transfer and retrieve the information. We are operating in an environment in which innovative use of information technology in organisations in general has led to the creation of new products, improved services and dramatically reduced computer costs. IT is playing a major role in transforming our institutions particularly our libraries to match the information needs of the users of next millennium.

2. FEATURES OF AN IT ENVIRONMENT

Information, an intangible resource, is used by decision-makers, planners and managers as a power to manage other tangible resources i.e.

man, material and money. Access to relevant information has always been important to those who influence their world consistently and successfully. Today the whole world is divided into two conceptual categories—Information rich and information poor nations. Only information rich are considered powerful and leaders of the society. Information is a vital resource which acts as a driving force for technological as well as societal development of any nation. A nation which is rich in information is rich in socio-economic spheres. The backwardness of any country in respect of socio-economic spheres is mainly due to lack of adequate information especially in the field of science and technology. Scientific and technological information made the greatest impact in the post-industrial society and contributed a great deal for research and development. Advanced nations pay great attention to support research and development activities of their industries and institutions. They use the information as a power to lead the society in all spheres of mankind. Following are some of the key features of an IT environment.

- Information acts as a key resource. A typical IT industry treats information as a commodity and involves economics of information, viz., production, costing and marketing.
- In an IT environment, information play a vital role as a fourth managerial asset after people, equipment and capital.
- Information, a conceptual resource, is used to manage other physical resources thus acts as power.
- Revolutionary change in the technology is the driving force of an IT environment.
- The pace of change in technology has been speeding up which shrunk the time scales from one hundred generations for the agrarian revolution, ten for the industrial revolution, to only one for the information revolution.
- IT moves very fast and brings incredible turbulence, change and progress in the lives of individuals, organisations, nations and regions.
- IT also transforms international politics and socio-economic relations and presents the world with new market opportunities.
- Information Technology converts information to the new global currency or new wealth creator.
- Scientific and technological information made the greatest impact in the post-industrial society and contributed a great deal for research and development.
- Availability of information in electronic form is the prime feature of an IT environment. The value of electronic information is that it can be easily shared, distributed, updated, manipulated, and rapidly searched. Also, the resources in an electronic environment are networked in such a seamless way that they can be accessed across different computing platforms.

3. IT IN THE SPECIAL LIBRARY ENVIRONMENT

Information centre or library is the heart and soul of an organisation. There is no doubt that the information environment is becoming increasingly digital and the IT has a wide ranging impact on library and information work. With the advancements of computer technology, information storage media had also kept on changing during past 50 years. Over the years, the shift has taken place from the paper media to electronic media. Libraries of old times were predominated by the documents in paper form. With the advancements in technologies emergence of micro media took place, which helped a lot to save the space and proved easy to manage. At the same time recording information in audio, and video tapes also became very popular. In late 1980's optical disc technology came into existence and grown as popular information storage medium in a very short period of time. During 1990's the optical disc media in the form of popular CD-ROM's has become increasingly important as a medium for the storage and dissemination of information with the additional advantages of easy access and portability with high storage capacity. CD-ROM's emerged as a means of access to

information, alternative to online access to external databases. The drastic change in information technology has transformed the work culture in special libraries and brought new responsibilities to librarians. They should be prepared for the adoption and absorption of new technologies in their work environment. The exciting growth of the internet in recent years has further changed and intensified the role of the information specialist in electronic environment. The growth of the Internet inspired many libraries to make documents and resources from their collections available online to the public as well as worldwide. Library and information services, local community information, bibliographic databases, and electronic reference works were all made available through remote login. A library's status was no longer solely defined by the collection it housed; it was extended to include online resources which were easily available to remote users.

As more and more information became available, because institutions were increasingly competing to demonstrate who had made available the most comprehensive range of information, there was little order to it. In early days of Internet it was difficult to find relevant information from such a huge ocean of unstructured knowledge. Later on, the plethora of information available on the Internet became more accessible with the help of various searching and indexing tools. Early tools, such as gopher, and veronica helped to give some order to the chaos. Now the Internet is most frequently used for reading and sending electronic mail (e-mail), transferring files (file transfer protocol), remote login through TELNET, and searching the world wide web (WWW). File Transfer Protocol (FTP) allow users to import and transmit files. TELNET, or remote login, allow individuals to tap information available on remote computers. The WWW and various web browsers, such as Netscape Navigator and Microsoft Internet Explorer, along with new searching tools, comprised the next generation of Internet resources. All these developments call for developing new skills to access information with new searching tools. Navigating the Internet using tools such as TELNET, FTP and WWW is becoming a part of the librarian's responsibility. The developments in the IT is motivating today's libraries or information centres to move from technical services to access services. Special libraries in the next century are going to be evolving very rapidly towards the paradigm where it is not just enough what you own in any specific library but equally important is, what your library is able to provide access to. It recognises collaboration, resource-sharing and the ability to bring libraries to their user as points of key concern.

The changing function and dimensions of the library and information work will direct the role and future of the librarian of a special library or information unit. The new network environment has created an active, service-oriented approach of libraries, which requires dynamic, organisational, personnel and technological changes in the profession.

Following are some of the areas of key concern of a special library where librarian can play vital role to keep pace with the changing IT environment.

* Library automation: automating library house keeping operations.
* Progressive automation of reference services.
* Library management: Classification, cataloguing, indexing, database creation.
* Access to local and wide area networks (Resource-sharing and information dissemination)
* Reprography: Photography, microfilms, microfiche, audio and video tapes, printing, optical discs etc.
* Technical communication: Technical writing, editing, publishing, DTP etc.
* Need for bibliographic instructions, orientations and training in the field of latest information technology.
* Reconstruction of the curriculum for the library and information science courses.
* Collection Development in different storage media-paper as well as other non paper media like optical and electronic resources.
* Developing skills to navigate Internet resources.

* 'Human Resource Development.

The responsibilities of these new jobs call for the previous duties plus acquiring skills to handle and manage with the latest technological development happening now and in near future. To explore the various uses of IT in a special library environment, latest facilities available and services offered by Defence Science Library (DSL) has been discussed in detail as an example of special library. Following portion of this paper gives an indepth information regarding impact of IT on various areas of DSL activities.

4. INFORMATION TECHNOLOGY SCENARIO AT DEFENCE SCIENCE LIBRARY

Defence Science Library (DSL), the central library of DRDO, is housed in a modern 5-storied building (covering an area of over 29,000 sq. ft.), with all the necessary infrastructure and aesthetic environment conducive for serious study, functions at DESIDOC. Catering to the information needs of researchers, managers and decision-makers in the areas of defence science and technology, library is moving strategically towards a more digital culture. Development in technology has been an important driving force for such a change.

Matching with the technological advancements, DSL is one of the best equipped libraries in the country in the field of science and technology and has the largest collection of documents in the field of defence science and technology. Library collection is a balanced mix of all types of storage media e.g. paper, micro, optical and electronic. DSL provides a variety of information services to its users to fulfil their day-to-day as well as exhaustive information needs using a complete range of information resources starting from conventional paper media, traditional online searching to latest electronic and optical media and world wide web and internet.

Following are some of the areas of library activities where DSL is effectively making use of the latest advancements of IT and able to perform better by providing its users a modern, technologically competitive library, which fulfils their information needs with more satisfaction.

4.1 Collection Development

Defence Science Library has the largest collection of documents on Defence S&T in the country. With the advancement of technology, DSL has also changed its procurement policies. The benefits like fast and easy access to information in less occupied space offered by the new information storage technologies in the form of electronic and optical media has attracted the attention of library management. Now apart from printed version of publications in various fields of science and technology, DSL has also built up an excellent collection of non-print media such as optical and electronic formats which includes a large number of CD-ROM databases and access to electronic periodicals through internet.

As on 01 November 1999 its collection of over 2.5 lakh documents includes over 66,968 books, 99,630 technical reports (including micro documents) 54,000 standards and specifications, and 48,835 back volumes of periodicals. It subscribes to 45 periodicals in electronic format and possesses 42 titles of bibliographic/full text databases in CD-ROM format covering almost all areas of defence science and technology.

4.2 Computerisation of Library House Keeping Operations

Computers have made forays into the libraries world over. Almost all the operations in a library can be computerised to achieve more efficient functioning. DSL has computerised various house-keeping and management functions of the library, viz. acquisition, serial control, circulation and budgetary control using an integrated software package called SUCHIKA, which is designed to run on a variety of platforms. To meet the computerisation requirements of library, DSL started automating its house-keeping operations using DOS and Unix versions of the SUCHIKA software. Though the software is able to fulfil the basic requirements of a good integrated library management system, the need for an improved version was felt with the growing technological

advancements. Factors like recent advancements in IT industry (hardware as well as software), a shift in the computer operating environment from DOS to Windows with added facilities of handling, processing and accessing information, and growing networking environments has prompted DSL to take initiatives to switch over to an improved version of SUCHIKA which can operate in Windows NT environments. This improved version is a fully integrated multi user software which uses common communication format (CCF) for data structuring to facilitate resource sharing among other libraries.

4.3 Database Creation Activities

Computerised databases help in collection of data and its efficient retrieval. DSL has developed good expertise in the design and development of databases. It has made successful efforts to develop bibliographic databases for the holdings of DSL and other DRDO libraries separately by converting the records of books, reports, conference proceedings and other serial publications into machine readable form and made them available for searching in the form of Online Public Access Catalogues.

Also, a database for Union Catalogue of periodicals of DRDO libraries has been developed at DSL. All the three databases are designed using the state of the art information technology tools. All these databases are available on a variety of platforms, like online, CD-ROM, etc.

Both services offer an excellent collection of business information, including news, industry analysis, and market research. Both also provide wide-ranging coverage of biomedicine, pharmaceuticals, and health care, including medical and pharmaceutical research, drug data and toxicology, and health care administration. In addition, DIALOG is known for its excellent collection of intellectual property data, and Datastar for its excellent coverage of pharmaceuticals and of European companies, industries, and news.

4.3.1 Online Public Access Catalogue For DSL Holdings

An online Public Access Catalogue (OPAC); a computerised database of the holdings of DSL, has been developed. As on 01 August 1999 the database covers the bibliographic details of 96 thousand books, technical reports, conference proceedings etc. held by the library and can be searched by various access points like author/editor, accession number, keyword (descriptors), International Standard Book Number (ISBN) or report number. It can also be searched by outstation users over a telephone line.

4.3.2 For DRDO Holdings

DSL has also developed an OPAC of the holdings of about 37 DRDO libraries including DSL and consist of more than 2 lakh records of books, reports, conference proceedings etc. Inputs to this database are provided by the DRDO libraries on the basis of CCF. The OPAC can be searched online through I-Net, dial-up mode and internet (TELNET) from distant locations. To harness the advantages of the CD-ROM like high storage capacity, portability and ease of use, this data is also made available on CD-ROM format for those laboratories where the internet facility is not provided.

4.3.3 Union Catalogue of Periodicals in DRDO Libraries

DSL has prepared a Union Catalogue of periodicals of DRDO libraries. Presently, data from 40 DRDO libraries has already been covered. A CD-version of Union catalogue for periodicals consisting of 7000 records is under preparation.

4.4 Information Services

DSL offers a wide range of information services to its users. Information Services may be discussed under two broad groups: Responsive and Anticipatory. Responsive Services are those that are given in response to requests for help or assistance or for finding answers to specific answers. Anticipatory Services are those that are offered in anticipation of demand for a specific type of reference or information service. Most of these services got new dimensions in view of latest

advancements of IT. An uptodate excellent collection, a mix of all storage media, which serves as a base for all library services and other modern infrastructure facilities available at DSL gave an impetus to existing library services and gave an opportunity to introduce new services. With the use of IT, DSL services in general are improved in terms of quality and quantity, and timeliness.

4.4.1 Responsive Services

Listed below are some of the important services offered by DSL :

Knight-Ridder Search Service

In addition to indigenous databases, DSL has set up an online facility for searching foreign bibliographic databases through Knight-Ridder Information Service Inc., USA. Offered by Knight-Ridder Information, Inc., the DIALOG and Datastar services provide access to millions of documents in more than 650 databases from a broad range of disciplines.

CD-ROM Search Service

Use of IT products in the form of CD-ROM databases have effectively helped the reference librarian to cater day to day reference queries/literature search in various fields of science and technology. DSL has added many CD-ROM databases in almost all the disciplines of S&T to its special collection and provide their search facilities to the users. A list of CD-ROM databases available in the Defence Science Library is given as Appendix–1.

Internet Service

DSL has created an amalgamated environment where the traditional online databases and familiar CD-ROM products have been joined by the latest fascinating advancements like Internet. To navigate the resources available world wide, Internet/World Wide Web is the best source of information apart from other well known and traditional tools. To keep pace with such an advanced and exciting technology, a special unit of internet search facility has been set up with the bandwidth of 64 kbps, dedicated lines through Videsh Sanchar Nigam Ltd (VSNL) to provide internet facility to the users at desk. Also, internet connections are provided in all the divisions of DSL to handle their day-to-day queries related to their work.

4.4.2 Anticipatory Information Services

DSL also provides anticipatory information services regularly to its users. Following are the information services provided in anticipation to keep users, particularly those involved in decision making, informed about the state-of -the-art in the respective areas of their specialisation.

Selective Dissemination of Information (SDI) Service

This monthly CD-ROM based personalised service is aimed at providing current and selective information to DRDO scientists working on various projects. Under this service, the subject interest profiles of project leaders and other DRDO scientists are matched with the updates of CD-ROM databases received in DSL. Subject areas covered under this service includes physical sciences, chemical sciences, electronics, electrical engineering, aerospace and other defence-related technologies from the CD-ROM updates of NTIS, INSPEC, GDI, US Patents, Aerospace, Compendex, Applied Science and Technology Index databases. This matching of individual profiles with databases is done using an in-house developed software. The matched and relevant information outputs thus generated are sent to the scientists every month. The feedback is received to take necessary steps to modify user profiles accordingly, and make sure that only relevant information is sent to users.

Defence Technology Alert (DTA) Service

This current awareness service attempts to disseminate current information of relevance to DRDO officials and scientists. Articles from journals subscribed by DSL (relevant to Defence Science and Technology) are scanned. The abstracts of relevant articles are prepared, arranged subject wise and issued as a fortnightly bulletin to high officials in DRDO HQrs, Technical Directors at DRDO HQrs, project leaders and other scientists of various DRDO labs/estts.

Newspaper Clipping Services

This service, meant for the top management at the DRDO HQrs covers news items of interest to DRDO. About 16 national newspapers and 25 magazines are scanned daily and relevant items are sent to Chief Controllers (R&D), and Directors in the Headquarters. Several foreign newspapers like Dawn, Washington Post, New York Times etc. available on Internet are also covered.

Current contents in Military Science and Technology (CCMST)

This is an indexing service published in the form of monthly bulletin, which includes the contents of currently published journals, reports, conference proceedings, etc. in the fields of Military Science and Technology, received in the DSL.

Current contents in Library and Information Science (CCLIS)

CCLIS is a bimonthly indexing service, based on about 48 periodicals in the field of Library and Information Science. It also includes contents of currently published journals reports, conference proceedings etc in the field of library and information science, received in the DSL.

Current Contents in Material Science and Technology (CCMS&T)

CCMS&T is also an indexing service issued in the form of bimonthly bulletin. This service covers about 40 periodicals in the field of material science and technology.

Forthcoming International Conferences on Military Science Technology

This bulletin, issued quarterly, informs well in advance the DRDO Scientists, about the forthcoming technology events, both national and international, in Defence-related areas.

4.5 Document Supply Service

As a support service to the various information services provided to its users, the DSL has also established an excellent document supply service to meet the full text document requirement needs. DSL provides document supply service to its users using all kinds of information resources–printed as well as electronic media. Documents of Indian and foreign origin are supplied from the DSL collection, local libraries and other libraries located outside Delhi, pertaining to their availability. For the purpose DSL is extensively making use of Delhi based libraries network (DELNET). DELNET may be accessed either through Dial-up mode using modem or via TELNET (164.100.247.18). In case desired document is not available in any Indian libraries, it is also arranged from the other international document supply centres like British Library Document Supply Centre (BLDSC), and National Library of Australia (NLA). The holdings of NLA can be accessed through internet using TELNET No. 192.102.239.30. Apart from normal traditional channels of document supply, DSL also extensively uses the electronic document delivery systems (e.g. Science Direct Service). DSL has recently subscribed to the internet based Science Direct Service of Elsevier publishers which gives momentum to provide more effective and less time consuming document delivery as well as reference services to its users. A list of 45 journals subscribed in electronic format by DSL through Science Direct Service is given at Appendix–2. Science Direct Service is a web database for scientific research that contains full text of more than 1100 Elsevier Science journals in the life, physical, medical, technical and social sciences available through the Internet. Science Direct also contains abstracts from other core journals in the major science disciplines to expand the literature coverage beyond Elsevier Science journals. DSL is making use of Science Direct Service to provide Current Awareness and literature search in addition to browsing, downloading and printing of requested articles in full text form to its users.

The BLDSC provides ARTTel (Automated Request Transmission by Telecommunications), an online document delivery service to libraries and individuals worldwide. DSL is making use of the British Library's ARTTel connection for ordering the documents to BLDSC. Along with the price, the information on remaining budget is provided by the software. Registered users can also search and order documents from the

Document Supply Centre holdings database. Request may be sent via ARTTel, which is used for electronic request or via e-mail through ARTEmail. Requests through ARTEmail require a system with access to the Internet. Documents may also be requested by mail or fax. Request are normally handled within 3-4 days of receipt, and copies are received by first class mail. Other facilities of BLDSC include OPAC, which became available in May 1997, and provides free access via the web to eight catalog that cover the major collections of the British Library in London and Boston Spa. Users can search the holdings and order items through a user interface. Information on the British Library Document Supply Centre is available on the World Wide Web at http://portico.bl.uk/dsc/.

DSL has subscribed to a new CD-ROM database, titled Inside Science (ISCD), offered by the British Library. ISCD is an integrated current awareness and document delivery service on the extensive collections of the BLDSC. It provides, in machine readable form, details from the content pages of over 13,000 of the most frequently requested serial titles held at BLDSC. Using ISCD, the users are able to select articles of interest from the index and view abstracts. Each CD-ROM hold the last six months contents data. Every month, a new disc is received at DSL, which provides details from content pages of latest serials received at BLDSC. To maintain a library with contents listing for all journals indexed in a year, there is need to store only archive discs of June and December. The document ordering features are available only to the users who are registered members. The order creation process is integrated within the software.

Apart from these, DSL and British Council Library also extensively makes use of the OPAC's of various international libraries like NLA, American Centre, etc. available on internet and various other document delivery services to get documents for its users like UnCover, UMI, and KR Source, available through their homepages on net. UnCover is an online periodical delivery service which indexes almost 17,000 English language periodicals. There are over 7 million articles available through online ordering, and articles appear in UnCover at the same time they are included in the current periodical issues from which they are taken. UnCover provides access to some of the major university and public libraries in the US, and also to some European and Australian libraries. Requests may be made by fax, phone, or e-mail. Additionally, UnCover is also available through Blackwell's CONNECT service. Information on UnCover is available on the World Wide Web at http://www.carl.org/ uncover/what.html.

K R SourceOne is a service provided by Knight-Ridder Information, Inc. that delivers Information from a worldwide collection of libraries with more than 1.5 million titles. The information collection includes digitally stored documents available in full-text including all original columns, figures, graphs, tables, and drawings. Requests can be made by phone, fax or e-mail, or ordered online through DIALOG and DataStar databases. Delivery is provided through mail, express mail, courier, fax, e-mail or FTP. A form is also available for Web-based ordering. Information on KR SourceOne is available on the World Wide Web at http://www.krinfo.com/ krsourceone/.

UMI offers two services, InfoStore and ProQuest. The InfoStore is a full-service document supplier which can provide journal articles, dissertations, technical reports, conference proceedings, etc. Document may be received by fax, courier, or mail. All documents received from the InfoStore are copyright cleared. An online form is provided for ordering via the Web. Information on the InfoStore is available on the World Wide Web at http://www.umi.com/infostore.

ProQuest is a service that offers full-text, full image, or can combine searchable text with graphs, charts, maps, and photographs. This service provides abstracts and indexes for over 3,000 titles, and all articles are copyright cleared. Documents are delivered by fax express delivery , or postal mail. ProQuest is available through the Web, and in Z39.50 and Windows environments. Documents may be delivered to a user's desktop or may be ordered through the UMI InfoStore Information on

ProQuest is available on the World Wide Web at http://pqdbeta.umi.com/ad/pdirect/.

In DSL, the availability of above mentioned electronic resources in the form of CD-ROMS, electronic journals, online OPACs', and other internet based resources has changed the traditional longstanding links between professionals, information, and patrons.

4.6 Resource Sharing

An important issue of concern to librarians in today's world of so called information rich society is to have access to even those information resources which are not available in house. This need arose due to the fact that however rich in its collections a library can not become self sufficient to meet the growing information requirements of its users in house. Also with the changing technological advancements the shift is towards access services. This means emphasis is on what your library can access rather what your library possess. Another point of key concern is rising costs of documents and their phenomenal growth in each subject. All these issues point out towards exploring the possibilities to share our resources with other libraries and information centres and also, to have access to their resources.

DSL extends its facilities and services to DRDO as well as to non-DRDO users by sharing its experience and resources with other libraries and information centres. DSL had organised a one day meeting of the heads of major Indian S&T libraries and information systems at Metcalfe House, Delhi, on 14 October 1998. The main objectives of the meeting were to strengthen co-operation amongst major S&T libraries in India for optimal utilisation of information resources using e-mail, online and other faster means of communication; to explore the possibilities of inter-linking these libraries through a network for resource sharing; and to accelerate bibliographic database development activities. DSL actively participates in the network programs like DELNET and INFLIBNET and played a vital role in the development of these networks. The purpose of networking is to establish a set up for sharing the resources.

DESIDOC has a well setup local area network (LAN) environment with multi platform operating systems. It has adopted STAR topology to setup its network environment using ETHERNET LAN CARD's with UTP (Unshielded Twisted Pair) CAT 5 (Category 5) cable. DSL is making the efficient use of this LAN facility. By putting it's library holdings and peripherals on network it became possible to provide OPAC facilities to the DESIDOC staff at their desk (i.e. searching documents, reserving documents, etc.) and sharing the peripherals available in DSL with other divisions. A 24 port intelligent hub is provided for concatenating all the systems for faster communications. On this backbone, the following three servers are installed.

- Novel Server: To share the various applications programs and software among different users (e.g. MS Office, DTP software. etc.)
- Unix Server: To search the DRDO holdings database which can be accessed through Internet (IP address 202.54.26.39) or in dial-up mode (011-3982617) or through the DRDO homepage (www.drdo.com)
- Windows NT Server: Proxy server connected to Videsh Sanchar Nigam Limited (VSNL) through 64 kbps lease line to provide internet facility to the users at their respective desks.

5. CONCLUSION

Information centre or library is the heart and soul of an IT industry. IT that will shape the future information world and considered to be a new wealth creator, offers immense opportunities for librarians. Use of IT in a special library environment like DSL, has been able to improve the overall library management activities and able to enhance the library services, both qualitatively as well as quantitatively. In order to draw maximum benefits from latest developments in IT, DSL has been able to create an environment where IT can grow and flourish so that its full potential can be harvested by its ultimate users. With the use of latest technologies DSL has been able to provide its users fast and efficient access to a variety of information resources with maximum

user satisfaction and able to achieve its very basic goal of providing right information to the right user at the right time.

DSL is continuously in the process of transforming into more electronic culture and trying to cope up with the latest technological developments. But, as the technology is changing at a very fast rate, there is still scope for the librarian and others involved in library activities to develop more skills and have matching human resources to keep pace with this changing information technology environment.

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CD-ROM Databases in Defence Science Library

Defence Science/Technology

S.No.	Name of the database	Frequency	Coverage	Type of Coverage	Name of Publisher
1.	Aerospace	4/12	1989 +	Bibliographic	DIALOG Corporation
2.	CNS Data (PNS, ENSP, IIMP, & CISNP)	4/12	1994 +	Full Text	Program for non-proliferation studies
3.	Global Defence Information	12/12	1987 +	Bibliographic	Skanfo
4.	FMM Middle East & Africa Forecast	12/12	1999 +	Full Text	Forecast International
5.	FMM NATO & Europe Forecast	12/12	1999 +	Full Text	Forecast International
6.	FMM Pacific Asia, Australia & Rim Forecast	12/12	1999 +	Full Text	Forecast International
7.	Jane's Defence Equipment Library *(full set of 23 titles)	4/12	1999+	Full Text	Jane's Information Group
8.	Jane's Geopolitical Library	4/12	1998+	Full Text	Jane's Information Group
9.	Jane's Market Intelligence Library	4/12	1998+	Full Text	Jane's Information Group
10.	Jane's Unmanned Vehicles & Targets	4/12	1998+	Full Text	Jane's Information Group
11.	Jane's Year of Defence	1/12	1999+	Full Text	Jane's Informaton Group
12.	Land & Sea-Based Electronics Forecast	12/12	1999+	Full Text	Forecast International
13.	Risk Report	6/12	1997	Bibliographic	Risk Report
14.	Space Systems Forecast	12/12	1999+	Full Text	Forecast International
15.	Unmanned Vehicles Forecast	12/12	1999+	Full Text	Forecast International
16.	Warships Forecast	12/12	1999+	Full Text	Forecast International

Engineering/Technology

1.	Applied Science & Technology Index	12/12	1983+	Bibliographic	Silver Platter
2.	Current Technology Index	4/12	1986-1993	Bibliographic	–
3.	EI COMPENDEX	4/12	1995+	Bibliographic	Dialog
4.	IEL (IEEE/IEE Electronic Library)		1990+	Full Text	HIS
5.	INSPEC	4/12	1989+	Bibliographic	UMI
6.	Inside Information Plus Science	12/12	1999+	Bibliographic	British Library
7.	NTIS	4/12	1983+	Bibliographic	DIALOG

Chemistry

1.	Chemical Abstracts	12/12	1996+	Bibliographic	American Chemical Society

Library Science

1.	Global Books in Print PLUS	12/12	1997-98	Bibliographic	Bowker
2.	LISA Plus	12/12	1969+	Bibliographic	Silver Platter
3.	Ulrich's Serials Database	2/12	1986-1993	Bibliographic	Bowker
4.	Whitaker's Book Bank	12/12	1986-1993	Bibliographic	Bowker

Standards/Specifications

1.	ANSI	6/12	1996	Full Text	ANSI
2.	ASTM	4/12	1998+	Full Text	ASTM
3.	BSI	6/12	1996	Full Text	BSI
4.	Defence Standards, UK	4/12	1999+	Full Text	IHS
5.	DIN–Standards	3/12	1998+	Full Text	IHS
6.	DoD–Standards	6/12	1994-98	Full Text	IHS
7.	Historical Standards Specifications	1/12	1994-98	Full Text	IHS
8.	ISO–Standards	6/12	1996+	Full Text	IHS
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