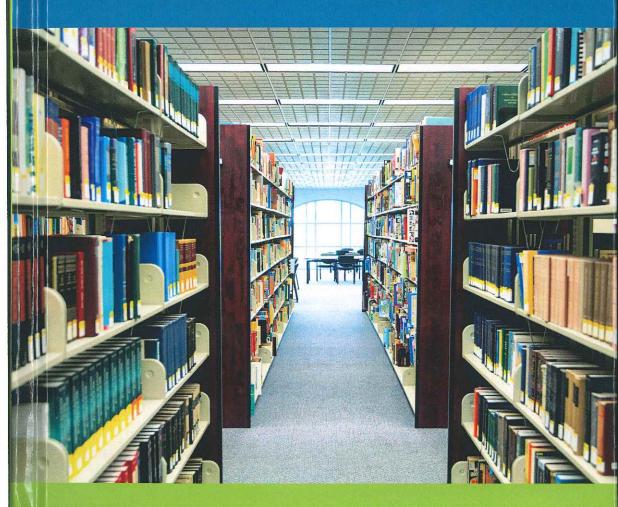
# APPLICATION OF ICT IN LIBRARY

AND ITS IMPACT ON LIBRARY SERVICES





Priyanka Neogi Bhanu Partap



## Application of ICT in Library and its Impact on Library Services

– Editors –

Priyanka Neogi Dr. Bhanu Partap

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## Chapter 2

## An Effectiveness of "DeLCON Consortium" at the Nodal Institution (NBRC)

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#### **ABSTRACT**

The purpose of the study was to explore the effectiveness of DeLCON Consortium at the Nodal Centre, i.e., NBRC, Manesar. The DeLCON Consortium function as an effective tool for imparting information or knowledge and prove helpful in making awareness among Library and Information Science (LIS) Professionals of National Brain Research Centre as most important aspect and its emphasis on online collaboration and sharing because it has social networking, user centric characteristics. Present article reports the functionality of DeLCON Consortium, administration and management by its Nodal Centre and the benefits to the users.

Keywords: DeLCON, Consortium, Library resources, e-resources, Effectiveness, NBRC.

## 1. Introduction about the NBRC Library

Keeping in view the imaginative and prescient and venture of the Institute, the library and data offerings play a important position in supporting, teaching and gaining knowledge of activities and offer the principle source for individual research at 'National Brain Research Centre (NBRC)'.

The NBRC Library is meant to help scientific research, academic community, faculties, scientists, researchers and users to keep abreast with the latest development in their area of activities and to provide information support for research and consultancy. At the same time for the faculties, scientist, researchers and students, the library is a source to get information support for their research field as well as for their self-development.

The NBRC Library has an inherent obligation to provide information services to support the educational, personal and economic endeavors of the researchers of their respective fields to the individual mission. Supporting research is an important role of the NBRC library.

The NBRC library was initially conceived as small library having very small collection of books (few books) for the use of faculties and scientists of the "National Brain Research Centre" which was located at rented building at "International Centre for Genomics and Engineering Biotechnology (ICGEB) Campus, New Delhi in the Year 2000.

In May 2001, the National Brain Research Centre has moved to the Gurgaon (at SCO 5,6 and 7) form ICGEB again in rented building but having three floors of building to explore more research work with more people and the library has shifted in basement with a big hall. Realizing the need for a Library to support academic, research and experiment work, the NBRC library was developed gradually and NBRC declared as 'Deemed University' status in the Year 2002 by the University Grants Commission (UGC). There after it was shifted to its permanent building in the year 2003, which is located at Manesar, *i.e.* 40 km away from New Delhi. Gradually the NBRC Library fully-fledged developed with its collections, features; services and now became most popular library.

On Neuroscience, Biochemistry, Molecular Biology, Genetics, Immunology and Microbiology, Psychology, Physics, Mathematics, Pharmacology and Toxicology, Computer Science, and General Subjects, the NBRC Library offers a huge collection of periodicals, books, and other important study resources. Through the DeLCON Consortium (DBT e-Library Consortium), the NBRC Library presently has access to 1172 online resources and 16 other additional periodicals. It also has news clips and digital archives concerning the center, as well as news letters and newspaper subscriptions. The NBRC Library's collection is constantly expanding to keep up with new research and knowledge in the area of neuroscience and allied fields.

The NBRC library is quickly establishing itself as one of the country's major digital libraries. It is expanding its collections at its circulation counter by obtaining books, e-books, e-journals and other documents as well as CD-ROMs, DVDs in a variety of academic fields. The campus-wide network provides access to all bibliographic details of all resources such as books, journals and the information databases, facilitating easy access to resources and reducing staffing requirements. The Library has subscriptions to a variety of scientific International and National periodicals, with the majority of them available online.

It has established relationships with a number of International Organizations and National Organizations for the exchange of documents such as articles and papers as well as an inter-library (ILL) borrowing program.

The NBRC library evaluates its information services on a regular basis to ensure that the Institution's requirements are met. It promotes resource sharing and coordination between libraries by offering an efficient and reliable interlibrary lending system which allows for most efficient use of resources.

The NBRC Library has installed 22 IBM PC computer (Pentium-IV computers) with the ISDN Internet access in the common areas to give services to NBRC users such as researchers and students. In order to assure the accurate information, the Library offer access to the most recent reference sources accessible. The Library also retains digital archives and press clippings concerning the center, as well as giving electronic access to subscribing journals through the university portal.

To provide the best possible service to all users, the NBRC's collection list has been digitized, and users have full access. The NBRC Library digitizes its collections using LSEASE software. For precise and quick circulation and administration of all library papers, a Barcode Technology has also been introduced. Administration, procurement, Circulation, Serial Controls, Cataloguing, and Retrieval of Information will all be made easier with the new program.

## 2. Main Activities of NBRC Library

- 1. Book acquisition
- 2. Acquisition of Periodicals and Journals
- 3. SDI Services Selective Dissemination of Information
- 4. CAS Services Current Awareness Services
- 5. ILL Services Inter Library Loan
- 6. Sharing of Resources
- 7. Circulation Services to users
- 8. Reference Services to users, Bibliographic services to users
- 9. Indexing and Special Services to users
- 10. Gathers, manages, saves, and retrieves data, knowledge, and information while bearing in mind the changing demands of its researchers.
- 11. Offer services to the connected Network Centres.

To provide the best possible service to all users, the collection list of NBRC has been digitized, and users have full access to all the materials. The NBRC Library digitizes its collections using LSEASE software. For precise and quick circulation to users and management of all library papers, a new barcode technology has been also introduced. The Administration, procurement, circulation, cataloguing, serial controls, and information retrieval will all be made easier with the new program.

A new two-stories library recently furnished, which gives 24X7 reading facilities, reference room, video conferencing facilities, online journal access facilities, a book section, Internet access facility, reprographic facilities *etc.* to users. The major goal of the NBRC library staff is to offer a great service to all NBRC and affiliated institutions' users.

The NBRC library examines its information facilities to guarantee that the Institution's needs are addressed. It also encourages collaboration between different organizations libraries by offering an efficient and dependable means of resource sharing, such as the inter-library lending service, which ultimately enhances resources and give copies of documents, papers, articles which are not accessible in those other libraries.

The NBRC library is a completely automated, accessible library that is available all year. The NBRC library's major goal is to offer a great services to the Institute's students, researchers, research associates, scientists, faculty and other users, as well as all of the Institute's affiliated centers. It is governed by a library committee.

Now, the NBRC Library is a nodal centre for the DBT's Electronic Library Consortium as well as became a very prestigious Library in the India and it is the role model for the all DBT Institutions.

NBRC library caters adequately to the institute's research and teaching activities. It is also open to other academic users for reference. It has proves to be a role model for other libraries and was prominently displayed and discussed on the website of the "International Brain Research Organization (IBRO)".

## 3. Concept of DeLCON and Initiation by NBRC

The concept of DeLCON (DBT Electronic Library Consortium) originated in a "DBT Director's Meeting" of DBT held at "Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram" in the month of 'January 2008'. Dr. S. Natesh, Senior Advisor, DBT had also participated in the meeting alongwith the Secretary DBT (Dr. M. K. Bhan). Prof. Vijayalakshmi Ravindranath, Director of NBRC volunteered to coordinate this project along with Officer-in-Charge, Library, NBRC. The NBRC approached to Directors of all DBT institutions requested them to provide the inputs on list of journals subscribed currently and also required journals.

#### 4. Formation of DeLCON Consortium

It was indeed a herculean task for the National Brain Research Centre (NBRC) to constitute a National Level Library Consortium in the field of Life Sciences and Biotechnology but the Challenges was accepted by the National Brain Research Centre (Nodal Centre) in the year 2008 and successfully implemented and made if functioning in the year 2009.

All the DBT Institutions (at that time 09 DBT Institutions) had provided the inputs regarding their subscribed Journals and their required Journals. Based on the inputs of subscribed Journals and desired Journals, NBRC (Nodal Centre) had

compiled a 'Union Catalogues' and 'shorted' it on 'publishers wise' and then asked the proposals from the Publishers.

The publishers have submitted their proposals for the 'Biotech Consortium' for 09 DBT Member Institutions (including DBT H.Q.) in the month of May-June 2008. The 'International Centre for Genetics and Engineering Biotechnology (ICGEB)' then approached to the DBT and shown the interest to be a part of 'Biotech Consortium'. Now, the DBT had requested NBRC to include the ICGEB also as another member of the Biotech Consortium and now the members were becoming 10 members.

The NBRC has again approached to the publishers and wrote them to include the ICGEB as a member for the 'Biotech Consortium' further the name changed as "DBT's Electronic Library Consortium (DeLCON Consortium). All the publishers have revised their proposals for 10 members and provided the revised proposals including 'consortium discount'.

A total consolidated list was then compiled by the NBRC. In month of Mar-April, 2008, quotations were invited from 19 publishers for 708 journals and databases (636 online journals, 71 e-books and 1 SCOPUS Data base). The initial received quotations were then forwarded to 'Dr. S. Natesh (Sr. Advisor, DBT) to review. It was clearly mentioned the following points:

- 1. The Journals needed to be examined on the basis of requirement, utilization and budget.
- 2. Prices had to be re-negotiated with the publisher.

At this point 'Dr. T. Madhan Mohan, Adviser, DBT' was deputed by the DBT to look after the concept. The DBT had constituted a negotiation committee comprising 8 members (including Consortia experts) from various Institutions vide No.BT/ BI/1/031/2004 dated  $9^{th}$  May, 2008.

The committee discussed the pattern of fund sharing by the institutions for the consortium and recommended that the institutions shall share the expenditure in proportionate to their annual budget allocation by the DBT. These shared funds would be pooled by DBT and released as one sanction to the coordinating institute every year. This budget sharing model has also been agreed by the Director's Meeting held at NII on 19th August, 2008 chaired by Secretary, DBT (Dr. M. K. Bhan).

In January 2009, the Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India, established its e-Library Consortium, which has been performing admirably. In 2009, there was 10 DBT primary research institutes, including ICGEB and DBT (HQ) New Delhi, began cooperating. The DeLCON's goal is to give scientists at member organizations access to a wide range of high-impact "Life Science" journals.

The 'DeLCON Consortium (Department of Biotechnology e-Library Consortium) is a major effort aimed at bringing major transformation to their research organizations. It was established in January 2009 with a wide range of high impact electronic journals from ten DBT member institutions (including ICGEB

and DBT). It is a nationwide program to provide the DBT Institutional communities with access to academic e-resources, including bibliographic databases and full-text database in all life science and medical subjects. It enables DBT research organizations throughout the country to gain access to high-quality electronic resources in order to boost research, teaching and learning.

In the start of 2009, the ten DBT organizations were granted access to all main e-resources. In the second phase of expansion in 2010, it was expanded to 17 additional DBT organizations, with a further 07 Institutions were added in the third phase of expansion in 2011. The present membership of the DeLCON Consortium stands at 34 organizations. The 'DeLCON Consortium' gives current and historical access to more than 1172 main and peer-reviewed periodicals, as well as a bibliographic databases, from 21 foreign publishers in a variety of subjects.

## 5. Main advantages of DeLCON Consortium

The following are some of the DeLCON consortium's key benefits:

- ☆ Electronic resource subscriptions based on consortium allow access to a larger number of e- resources at a reduced cost;
- Best use of funds.
- ☆ Allows for the creation of digital libraries
- Aids in the provision of improved library services such as CAS and SDI
- ☆ Cost-sharing for technical and training assistance
- ☼ Electronic resources do not require library space or shelves, and they cannot be thieved from the library. The DeLCON consortium have been offered better terms of licenses for use, archival access and preservation of subscribed electronic resources, which would not have been possible for any single institution; and
  - 24x7 access (access available 24 hours a day, 7 days a week)
  - Low-cost maintenance

## 6. Impact of DeLCON Consortium at NBRC

The NBRC used to subscribe to 311 online publications and about 77 print journals before joining the DeLCON Consortium. The NBRC had taken on the significant duty and responsibility of forming the DeLCON consortium, and the DeLCON Consortium began operating in January 2009 as a result of their efforts. The NBRC has stopped the majority of online and print periodicals since the founding of the DeLCON Consortium, as the NBRC now receives 1172 resources through the DeLCON Consortium. Some significant and top journals are now being subscribed with institutional funds that were not covered by the DeLCON Consortium. The NBRC has saved institutional funds thanks to the DeLCON Consortium. The DeLCON Consortium now covers a broader selection of key periodicals, meeting the needs of NBRC scientists and researchers in their respective fields. The DeLCON resources

contribute to the NBRC's continued growth in terms of research and publishing quality. It would be impossible for any single organization to negotiate favorable deals for subscriptions, archival access, and preservation of licensed e-Resources than the DeLCON Consortium, which is currently offering the DBT Institutions with lower costs, more appropriate terms, and a broader range of journals.

## 7. Cooperation and Coordination with the Other Institutions and their Libraries

The NBRC had approached all the 14 DBT Institutions and 18 NER Institutions and made a major network group for resource sharing and all these institutions agreed to share their resources hence cooperation and coordination with other Institutional Libraries has increased, which benefitted to faculties, Scientists and library staffs. The DeLCON Consortium had reduced the workload and burden of the librarians, hence the Library staffs getting sufficient time to deliberate other library activities and other services.

## 8. Free Document Delivery of NBRC Library through the DELCON Consortium

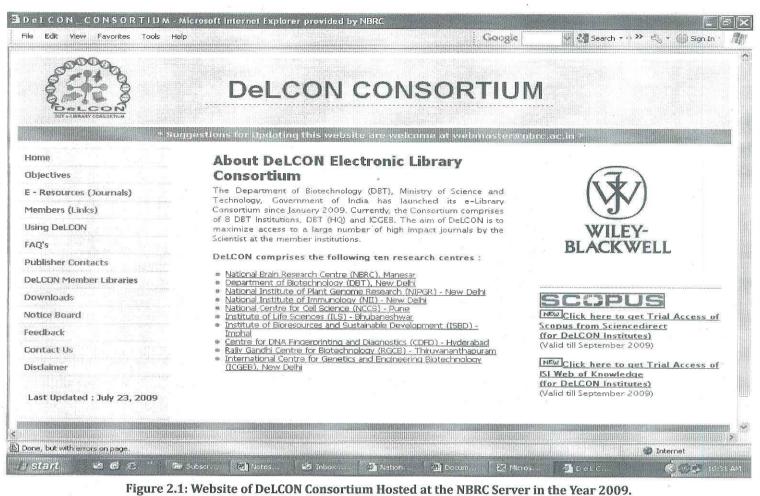
The most important feature of the NBRC library facility is the concept of digital library since inception. In the electronic mode it provides free of cost, references, papers, full text articles, copies of reprints of relevant literature from the DeLCON resources to users all over India. The NBRC Library offers "Inter Library Loan (ILL) services to the organization's 48 networked centers across India. The Researchers from various institutions email NBRC with their requests for research materials or research papers, which are subsequently downloaded and provided to them free of charge.

## 9. Activities done for the DeLCON Consortium by the NBRC

The National Brain Research Centre (NBRC) has taken phenomenal task to constitute a "National Level of Library Consortium" in the area of the "Life Sciences and Biotechnology" and started working for the "DeLCON Consortium" from the month of February 2008 and successfully implemented and made if operational in the year 2009.

The NBRC has complete responsibilities for the "DeLCON Consortium" regarding management; operations and functions since inception. The NBRC has launched the first self created website on own NBRC Server which was earlier hosted in the year 2009 at: http://www.nbrc.ac.in/delcon. (Figure 2.1)

Further, the DeLCON website has been developed by the Information of Library Network (INFLIBNET) Centre, Ahmedabad and was hosted in the year 2010 at the NIC Server, *i.e.*, http://delcon.gov.in. (Figure 2.2)



DeLCON DRT-Electronic Library ( X **=** (0) CH A Not secure | delcon gov in nic mailvess About Us Mid" the life in the F-Resources Holding Details a Usages Statistics\*\*\* 1115 Operation Search & Brow Welcome to DeLCON: DBT Digital Library Federated Search 24x7 access to e-Resources 21 w includes 17 DBT Institutions including LCGEB, New Delhi and 18 North Easte Licences & Fairuse Troubleshooting FAQS NDL Shodh Ganga Contact Publisher Solver Board .... New Trials NEW Shodh Gangotri Sharing of DecCOR resources with PAS/ Co-PEN/ Scientists of DBT funded Ongoing Projects \*\*\*\*\*\* Access to E-Resources

Figure 2.2: Website of DeLCON Consortium Hosted at the NIC Server in the Year 2010.

Institute Access Details

Open Access Journal Hes Image Gallery How

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The DeLCON website formally launched by the former Director of NII (Prof. Avadhesh Surolia) at the Conference Room of the National Institute of Immunology, New Delhi on 16<sup>th</sup> July 2010 during the 6<sup>th</sup> DeLCON Nodal Officers Meeting at NII, New Delhi and it was dedicated to the Nation. (Figure 2.3).

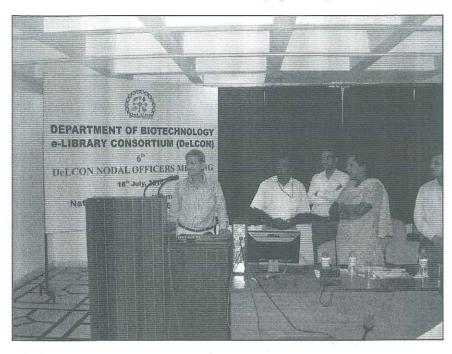


Figure 2.3: A View of the Launching Ceremony of the DeLCON Consortium at NII, New Delhi and the DeLCON Website Dedicated to Nation.

## 10. Role and Responsibilities of NBRC

Through the formed committees, the NBRC (National Brain Research Centre) serves as a regulatory body for the administration, supervision, and implementation of the overall DeLCON Consortium initiative. On behalf of the DeLCON Consortium, it organizes all actions related to negotiation, process of renewal of e-resource subscriptions, and consequent troubleshoot. The NBRC also facilitates better terms of reference for the usage and maintenance of subscription electronic resources by encouraging collaboration among member organization. In a nutshell, the NBRC is in charge of the following:

- 1. Managing the "DeLCON Consortium" since inception (*i.e.* from the Year 2009), which is National Biotechnology Consortium.
- Coordinating meetings of its various Committees (such as Steering Committee Meetings, Review Committee Meetings, Negotiation Meetings, DeLCON Nodal Officers Meetings, SFC Meetings, Audit and Budget related meetings etc.).

- 3. Constitution of National Steering Committee and National Negotiation Committee through Department of Biotechnology (DBT);
- 4. Negotiating rates of subscription and its terms and conditions with the publishers;
- 5. Managing whole DeLCON funds and arranging required budgets from the DBT as well as releasing funds to publishers.
- 6. Ensures IP-based access of subscribed e-resources to beneficiary Institutions;
- 7. Attend to the problems faced by member institutions and liaise with publishers to resolve such problems;
- 8. Managing administrative credentials such as user name and password for the DeLCON Consortium and its members.
- 9. Develop tutorials and promotion materials, impart training and technical support to member Institutions;
- 10. Propagate the Consortium amongst other Institutions; other Ministries/ Departments encouraging them to avail the benefits of the national initiative through ILL services and resource sharing for research works;
- 11. Extracting, arranging, evaluating subscribed e-resources and monitoring its usage statistics regularly and analyzing usages statistics of all the DeLCON Members.
- 12. Sign license agreement for access to various electronic resources on behalf ofmembers:
- 13. Maintaining and updating DeLCON website of the Consortium (http://www.delcon.gov.in) regularly;
- 14. Managing the manpower for the DeLCON Consortium;
- 15. Evaluating and analyzing the License Agreements of publishers and discussing on the major issues related to terms and conditions
- 16. Evaluating and analyzing the proposals of the publishers for the subscriptions/renewals of the DeLCON resources.
- $17. \ \ Organizing \ awareness \ programme \ time-to-time \ to \ promote \ e-resources;$
- 18. Improving cooperation and communication amongst member Institutions;
- 19. Measure impact of access to e-resources on research output in beneficiary institutions; and Present periodic report to the Department of Biotechnology (DBT) on extent of usage of e-resources, economics of the consortium and its impact on research output.

## 11. Role of DBT towards DeLCON Consortium

The DBT has fully supported the DeLCON Consortium. The DBT is in charge of forming the Consortium's National Steering Committee, National Advisory Committee and Negotiation cum Steering Committee. The DBT is also in charge

of developing policies, assessing progress, working with other Consortium across the country, and ensuring a steady reduction in print subscriptions in recipient institutions. The DBT also monitors usage of e-resources and its impact on research output in beneficiary institutions.

#### 12. Major Achievement through the 'DelCON Consortium'

- 1. Identification of NBRC as a "Nodal Centre and Head Quarter" for the DeLCON Consortium.
- 2. The Inter Loan Library (ILL) services and Resource Sharing has been increased after initiation of DeLCON Consortium and it was enhanced inter-institutional interactions and collaborations among the DBT Institutions.
- 3. Established cooperation and communication among the DBT Libraries, NER Institutions and other major libraries.
- 4. Digital Collections and Back Volume collections have been increased.
- 5. Due to DeLCON e-resources the NBRC faculties and scientists have increase their research qualities and paper of publications. The citation Index and h-Index have been enhanced for the faculties and scientists.
- 6. The DeLCON Consortium has fulfilled day-to-day requirements of the NBRC faculties, scientists and other researchers.
- 7. Library budgets have been saved due to the DeLCON Consortium and which were utilized for the research works.
- 8. The quality publications and papers have been enhanced and increased.
- 9. Collaboration of NBRC has been increased with various National and International organizations.

#### 13. Scientific Achievements due to DeLCON Resources

The NBRC faculty and scientists have produced several papers, with the number of publications increasing year after year, as shown below. Young Scientists awards, Shanti Swaroop Bhatnagar awards, and DBT IYBA prizes, to name a few, have all been given to NBRC scientists.

The Year-wise publication of NBRC is given below during the year 2009 – 2021 (upto Aug.):

Table 2.1: Publication of NBRC for the Period of Year 2009-2021 (upto Aug.)

Year	Published Papers	Year	Published Papers
2009	32	2010	47
2011	34	2012	48
2013	41	2014	36
2015	48	2016	53

Year	Published Papers	Year	Published Papers
2017	55	2018	45
2019	38	2020	34
2021 (Upto Aug.)	33		0

An Effectiveness of "DeLCON Consortium" at the Nodal Institution (NBRC)

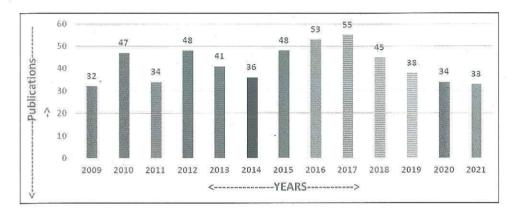


Figure 2.4: A View of the Publications of the NBRC during the Year 2009 – 2021 (upto Aug.).

Table 2.2: The Usages of Elsevier, Wiley, Nature and Springer by NBRC

Year	Elsevier	Wiley	Nature	Springer	
2013	116813	4355	14322	1097	
2014	126193	4544	16439	805	
2015	105685	3573	17236	815	
2016	26669	3564	15553	1787	
2017	23631	3443	15023	2195	
2018	30910	3872	9750	308	
2019	22863	4452	7955	264	
2020	18929	4854	8171	457	

Table 2.3: The Usages of T and F, CSHL, OUP, AAAS, PNAS and ASBMB by NBRC

Year	T and F	CSHL	OUP	AAAS	PNAS	ASBMB
2013	255	1243	2654	2536	3472	2300
2014	73	839	4089	2259	2878	1769
2015	1325	820	5173	1675	2752	1733

Year	T and F	CSHL	OUP	AAAS	PNAS	ASBMB
2016	112	670	2765	2082	2460	1287
2017	85	581	2433	1637	2850	2098
2018	107	649	2653	1910	2972	1854
2019	329	559	2751	3339	3352	1439
2020	369	387	2315	XX	2625	624

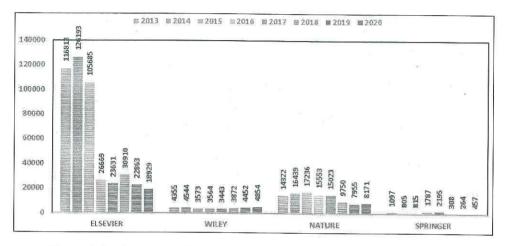


Figure 2.5: The Usages of Elsevier, Wiley, Nature and Springer by NBRC.

Table 2.4: The Usages of ASM, MBS, AACR, AAI, ASH, ASPB, NEJM, MAL and ACS by NBRC as well as the Last Column is Showing the Total Download by NBRC for the Years 2013-2020

Year	ASM	MBS	AACR	AAI	ASH	ASPB	NEJM	MAL	ACS	Total
2013	1401	63	850	396	231	60	180	222	325	152775
2014	1082	59	597	520	205	19	238	126	325	163059
2015	1099	61	488	330	108	30	218	85	268	143474
2016	1000	35	373	301	74	11	217	143	342	59445
2017	1153	45	405	399	71	19	218	80	48	56414
2018	1643	102	384	302	65	11	132	206	XX	57830
2019	1644	103	493	339	134	XX	XX	XX	XX	50016
2020	1605	18	512	293	XX	XX	XX	XX	XX	41159

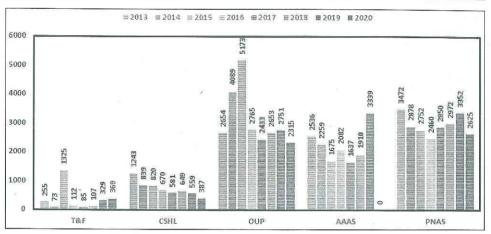


Figure 2.6: The Usages of T and F, CSHL, OUP, AAAS and PNAS by NBRC.

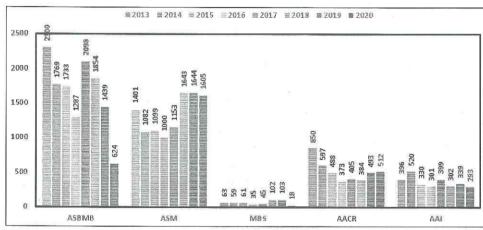


Figure 2.7: The Usages of ASBMB, ASM, MBS, AACR and AAI by NBRC.

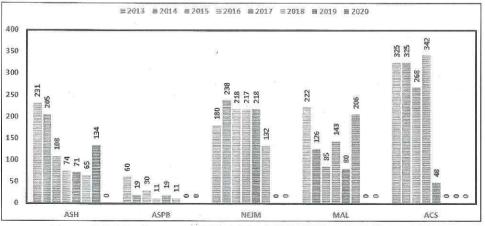


Figure 2.8: The Usages of ASH, ASPB, NEJM, MAL and ACS by NBRC.

## 14. Training, Workshop and Conferences organized for DeLCON at your Organization

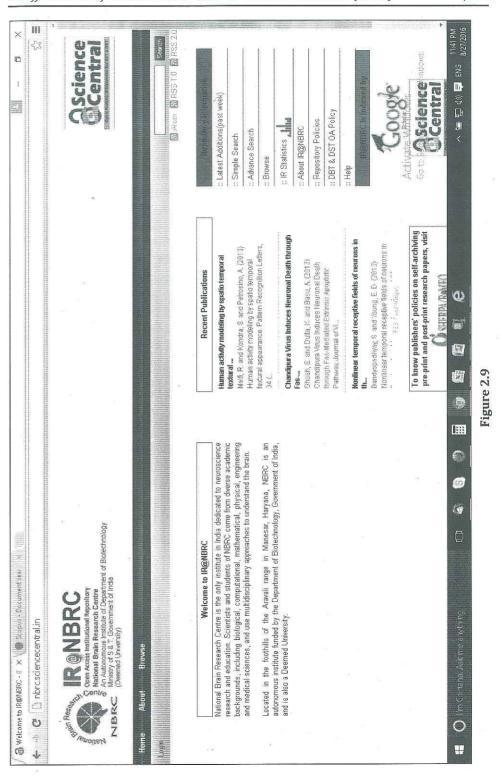
The NRBC has organized various "User Awareness Programme" at NBRC in association with various International Publishers during 2009-2021. The NBRC also organized a National Seminar (DeLCON National Seminar-2013) in the year 2013. The Coordinator also visited various member organization and given presentation about the DeLCON and encouraged the users to utilize the DeLCON Resources.

#### 15. Institutional Repositories (IR) of NBRC

The NBRC have set up Institutional Repository (IR) from April 2015 for all our research papers made available open access. The repository has been created with the help of CSIR-URDIP, Pune by using E-print (Open Access software). Papers of the NBRC publications have been uploaded in this IR. Papers are being uploaded as per the publisher's embargo period. The hyper link of NBRC Institutional Repositories (IR)can be accessed through the following web link http://nbrc.sciencecentral. in/. (Figure 2.9).

## 16. Suggestion to Improve the Services of DeLCON Consortium

- 1. The librarian and staff members of DeLCON Institutions should conduct an orientation/training programmes to users how to search information under DeLCON Consortium and how to use resources;
- 2. There is a need to evaluate the usage of DeLCON resources periodically by the member institutions and include more number of journals in the consortium;
- 3. All the member libraries should organize workshops on regular basis to enhance usage of DeLCON Consortium among users;
- 4. Regular meetings with nodal officers of the member Institution will enhance the usages of the DeLCON Consortium to improve its services to members;
- 5. The libraries should try to introduce electronic document delivery services for resource sharing;
- 6. More related and desired journals and databases should be subscribed;
- 7. Redesigning of all the member library web sites with active links and contents of DeLCON Consortium and also user-friendly software to access online resources;
- 8. Evaluation of the users needs periodically and identification of useless journals and replacement of those with some useful journals;
- 9. Evaluation of the spent amount from the budget and proper analysis is also required every year in the selection of proper journals;



- 10. Fixation of annual caps for longer periods, so price increased would be controlled.
- 11. Publisher's License should be re-review by a legal experts and a separate negotiation should be organized to deal with the publishers for favorable terms and avoid the critical terms of the publishers.

#### 17. Conclusions

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Libraries have transformed their roles as a result of the use of information technology; today the librarian is referred to as an information manager. The consortia deliver up-to-date and relevant data to consumers' desktops. It is impossible to achieve without adequate IT infrastructure. The Consortium model is being adopted by all organizations and institutions. The use and good impact on the minds of the scientific community at the NBRC were demonstrated in a research study conducted from 2009 to 2016. The majority of users now opt to use exclusively electronic resources rather than print subscriptions. Yearly, the DeLCON Consortium makes certain changes to the titles or members to meet the needs of the laboratories. Overall the DeLCON Consortium is very much useful and effective for the Nodal Centre i.e. NBRC and its users. Due to the DeLCON Consortium the NBRC have improved their publications as well as their infrastructures etc. and the NBRC highly utilizing the resources of DeLCON Consortium.

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