

# SISCOM

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**S & T Information Scene in India***Kuldip Chand*

There has been a tremendous growth in the output of scientific and technical information and also in the number of users. Realising that such information should be made available to the users expeditiously, the Government has taken several steps like the establishment of National Information System on Science & Technology (NISSAT), National Informatics Centre (NIC) and various databases which make use of the latest information technology.

The following eight sectoral centres have been established under NISSAT to provide bibliographic information: (i) Leather Technology (NICLAI) at the Central Leather Research Institute, Madras; (ii) Food Science and Technology (NICFOS) at the Central Food Technology Research Institute (CFTRI), Mysore; (iii) Machine Tools (NICMAP) at the Central Machine Tools Institute, Bangalore; (iv) Drugs & Pharmaceuticals (NICDAP) at the Central Drug Research Institute, Lucknow; (v) Chemistry & Chemical Technology (NICHEM) at the National Chemical Laboratory, Pune; (vi) National Centre on Bibliometrics at INSDOC, New Delhi; and (viii) Compact-Disk (NICDROM) at the National Aeronautical Laboratory, Bangalore.

In addition to the above centres, NISSAT has also established 3 information analysis centres and data centers for undertaking the task of acquiring, evaluating, integrating, condensing and analysing factual and numeric information. These hard data centres are on: (i) *Crystallography* (NICRYS) at the Madras University, (ii) *Advanced Ceramics* (NICAC) at the Central Glass & Ceramic Research Institute, Calcutta, and (iii) *Resource Centre on Software for Bibliographic Applications* at the Andhra University, Visakhapatnam.

In order to bring the information support services available to the scientists and technologists in India at

par with those available to their counterparts in the developed countries, NISSAT has taken up the establishment of online search facilities on permanent basis in the country. Five regional access centres (called NACID) established are at : (i) INSDOC, New Delhi, (ii) NCL, Pune, (iii) NAL, Bangalore, (iv) CLRI, Madras, and, (v) IACS, Calcutta. NISSAT has taken initiative for the development of metropolitan network of libraries to ensure better utilisation of S&T information resources through resource sharing, to moderate functional load of information centre management and to take care of communications. CALIBNET and DELNET are going to be the networks of main scientific libraries of Calcutta and Delhi, respectively.

National Informatics Centre (NIC) has developed a satellite based Government informatics Centre Network (NICNET) which provides information services to various government departments and associated organisations in the country. These services include : conduction of feasibility studies, development of computer based Management Information System (MIS), designing and implementation of databases, analysis, modelling and optimization, training of government officials apart from design development, installation and operation of computer systems and local area networks.

INDONET is commercial computer network being devolved by CMC, Hyderabad. VIKRAM, a packet-switched public data network is being developed by the Department of Telecommunication.

In addition to the above efforts, some of the apex science agencies like CSIR, ICAR, and DRDO, are building their own information networks. For example CSIR is planning to have a computer communication network (SIRNET) for exchange of information among its laboratories. DRDO is planning to have DESINET, a network of Defence libraries covering only unclassified and technical information. VIDYANET would provide rapid communication by linking computers of 30 institutions in India with a gateway to similar network like European Academic Research Network (EARN).

India is also participating in DEVINSA (Development Information Network on South Asia) with a view to organizing a database on socio-economic development of South Asia.

ICMR, in collaboration with NIC, supplies bio-medical information from the MEDLARS data-base.

India is participating in international information systems such as AGRIS (International Information System for Agricultural Science & Technology) and INIS (International Nuclear Information System), and UNESCO-UNDP sponsored regional network, ASTINFO which seeks to promote socio-economic development, regional cooperation and better understanding through sharing of information resources and experiences available within and outside the region.

Some of the Government departments opened recently have the computerized information systems from the beginning. For example, Department of Biotechnology has set up BTIS (Biotechnology Information System and Department of Environment has established ENVIS (Environmental Information System).

Specialized information service on patents is available at the Patent Information System, Nagpur.

Technology Information, Assessment and Forecasting Council (TIFAC) is receiving specialised international information on various emerging commercialisable technologies to feed the same to TIFACLINTE.

The Parliament has a Computer Centre for Parliament Library Information System (PARLIS). It has established Parliament Library, Reference Research, Documentation and Information Service (LARRDIS) to meet the information requirements of the Members of Parliament.

The multidimensional efforts, as described above, are indicative of the importance extended to meet the needs of S&T sector through new information technology.

## **MICRO-METADEX Metallurgical Data**

Developing countries can now tap into a broad range of computerized data on the metallurgical industry at bargain prices via MICRO-METADEX plus, the first product to be developed as a result of a collaborative agreement between UNIDO and Materials Information.

Materials Information is the joint information service of the Institute of Metals, London, and ASM International, Cleveland, Ohio.

The electronic diskette contains subject subsets from METADEX, the world's leading database on metallurgy, coupled with the search capabilities of MICRO-ISIS, one of the universally most popular text-retrieval packages.

The database will run on any IBM PC or compatible, with at least 640K of RAM memory and a hard disk. As a rough guide, users should allow 3 megabytes of (free) hard-disk space for every 1,000 records plus additional space for annual updates.

Datasets currently cover information for 1989-1990 on environment, scrap and recycling; gold and silver production and recycling; beneficiation; foundry technology; and welding, with energy use soon to follow. Each dataset comes with MICRO-ISIS built in, allowing powerful menu-driven searching of all the information.

The program allows keywords, including numbers, from the document title, index terms, codes, author names and a range of other fields to be searched by keying in the terms, or by selecting them from a dictionary display. Very complex search strategies can be saved, edited and re-used. The data, which will be retrieved in a matter of seconds, can be displayed on the screen in a variety of format outputs, ranging from titles alone to complete records. The data can also be printed or written to disk for subsequent use. The full METADEX abstracts are available for display and printing: these provide complete summaries of each paper and may substitute for the original document. The words in the abstracts are not themselves searchable because of the storage limitations of a PC-based system.

### **Indian Science Citation Index**

Realising the poor coverage of Indian S&T periodicals in the Science Citation Index (in 1988 only 11 periodicals were covered out of some 700 S&T Periodicals), it has been decided to generate an Indian Science Citation Database at INSDOC. Indian papers are mostly cited by Indian Scientists. However, this particular citation picture does not get reflected in the citation scenario of the Science Citation Index. As a result, in most cases

citation scenario of Indian papers compiled on the basis of the Science Citation Index, remains incomplete. One of the major objectives of the Indian Science Citation Index is to project the complete citation scenario of the papers of Indian scientists, using both Science Citation Index and Indian Science Citation Index. The software for generating database has already been developed and tested. In fact two softwares have been developed - one is UNIX based and other one is MS-DOS based. In the earlier case UNIFY package has been used and in the later case CDS/ISIS (Ver 2.3).

In the first phase, such research periodicals as contain more than 80% research papers are being considered. The remaining periodicals will be covered in later phases. The data input has already started with more than 100 periodicals for 1990.

Database will generate apart from the citation scenario of the papers of individual Indian scientists, source index, which will list the papers published in a year, subject index and affiliation index. It is intended to start rendering services from this database from July 1991 onwards.

### **“No Citation Analysis Please, We’re British”**

Citation analysis is being used as one of the tools to evaluate the research work of an individual, department or a group. However, the opinions of researchers about this method of evaluation of their research work differ considerably. Some might consider it a useful and reliable tool, others consider it as “pseudoscience”, “utterly misconceived”, “based on a conceptual fallacy”, “totally mistaken” and “the refuge of Philistines”. The latter views were expressed in a 5000 page British report brought out by Universities Funding Council and the Committee of Vice-Chancellors and Principals (Science, 3 May 1991, p. 639). This report was as a consequence to “Consultative paper” circulated to find out ways to produce quantitative assessment of the research performed by university department.

The report reveals “a surprising depth of feeling” amongst the researchers, about citation analysis. Comments from almost all of Britain’s

45 universities show that most academics believe that citation counts and "impact ratings" will not accurately measure departmental quality and, even worse, may be abused and drive research in wrong direction. Some of the feelings expressed in the report are :

1. The tradition of free exchange of ideas without thought of enhancement of reputation is at stake.
2. People cite teachers, colleagues and friends merely to improve their citation counts creating citation "Circles" or "Cartels".
3. The citation "circles" and "cartels" may spread to Britain "if citation analysis became a normal part of research assessment".
4. Papers may win a high citation score not because they are good but because they are bad (some reports of cold fusion may come into this category).
5. Citation counts of a small group (department) over a short period of time (5 years) may not accurately assess different fields. Time lags are very different in different fields—hot fields like molecular biology get the bulk of their citations in 2 years, chemistry is longer, and social sciences are longer still.
6. Researchers who are cited in non-English language publication may find their citations are not registered in the ISI database.
7. There is problem of identifying who really did the work being cited (as only first author in a paper is taken care of). Weighting should be given to reflect the "input of each author" and so ensure that "all are given their due credit".

Most of this criticism is regarded as excessive at the Institute for Scientific Information (ISI). David Pendlebury, editor of the ISI magazine *Science Watch*, says that citation "circles" referred to by the British Scientists are probably just academic folklore. In reply to "bad papers cited more", Pendlebury clarifies that most citations are neutral references to earlier work, many are overtly positive, and "less than 10%" are negative.

If citation scores are so universally maligned then what measures British academics accept for qualitative and quantitative assessment of their

work. Replies were in favor of peer reviews and relatively less known idea of "esteem indicators".

Gian Singh

## Chemistry cites well

When talking about citations it would be worthwhile to know how different disciplines get citations. Pendlebury of Institute for Scientific Information (ISI) has determined the "Uncitedness rate" for papers published in 1984 (*Science*, 4 January, 1991, p. 25). He has observed that 38.8% of chemistry papers received no citations. The uncitedness in engineering being 72.3 and 98% in arts and humanities. Different areas of chemistry varied widely, with inorganic and nuclear (17%), organic (18.6%), biochemistry (19.4%), electrochemistry (64.6%), chemical engineering (65.8%), material science (66.4%), applied chemistry (78%), paper and wood (77.6%) and metallurgy and mining (75.2%).

## Native Viruses Play Havoc

Microcomputer users are bedevilled by three viruses that are exclusively Indian in origin and are working out ways to combat them for the safety and health of their own computers and those of their clients at home and abroad.

There is one that has been named "Joshi". The birthday of this anonymous gentleman falls on January 5. No microcomputer can get started on that day unless it types "Happy Birthday, Joshi." It is a disorder that has spread for some time and could be detected only in December 1989. It infects the boot sectors of the floppy disks and the partition table of the hard disks.

The other one is "print screen". It is also a boot sector virus like "Joshi". It occurs after every 255 inputs/outputs.

The third one is "9.8". It is rare, But when contacted, this virus messes with the keyboards every 9.8 minutes of operations.

Virus is information disorder -- a software sickness for any microcomputer. The three

Indian viruses add to a huge family of those detected and being pursued for cure all over the world. There cannot be a complete cure. But many have not come to India yet. With the help of British simulators, efforts are being made to keep them out of the Indian computer circuits.

## SIRNET

Electronic mail (EMAIL) is a rapidly expanding form of communication enabling scientists and engineers to exchange electronically created messages over computer communication networks. E-Mail facility enables individual user to exchange messages over the network. The messages can be sent to a specific individual or to a group of individuals. Electronic messages are keyed-in or entered as text files using any file editor. The user scientist can read and then forward these with one's own comments. Any message deposited by the user are routed to the destination. The destination may be any linked CSIR institutions or other organisations on a larger network ERNET (Education & Research in "Computer Networking), set up by DoE.

CSIR has over 40 research institutions spread throughout the country. The area of research carried out in CSIR laboratories include almost all disciplines of science and engineering. As sequel to dissemination of scientific and technical information, INSDOC is presently engaged in networking all CSIR laboratories and institutes under SIRNET (Scientific and Industrial Research Network).

SIRNET is a computerised communication network for the CSIR laboratories. At present SIRNET has only one mail node and a number of user nodes. Every mail node in a network is named and the present SIRNET mail node is known as '*csird*', signifying the CSIR mail node in Delhi, located at INSDOC, New Delhi, and is connected to ERNET. ERNET in turn is connected to the international network, *UUNET* (Unix User Network), through which other international networks like BITNET, CSNET and JANET are accessible.

The mail node '*csird*' is directly connected to DoE mail server '*vikram*', which acts as the clearing node in Delhi for ERNET. IIT Delhi node, '*netearth*' and JNU node, '*jnuniv*' are also

connected to '*vikram*'. Consequently, any one connected to *csird* can reach ERNET users in IIT Delhi and JNU via *vikram*. All connections to *vikram* from *csird*, *netearth* and *jnuniv* are established using dial up telephone lines of Delhi's Mahanagar Telephone Nigam Limited (MNTL). In addition to being a clearing node for ERNET at Delhi, *vikram* also acts as a forwarding/ receiving node for mail to/ from the node *shakti* at the National Centre for Software Teaching (NCST), Bombay. *Shakti* serves as a national clearing node for all ERNET city nodes. The present ERNET city nodes are *shiva* of IIT Madras, *turing* of IISc Bangalore and *vikram* of DoE, Delhi.

SIRNET E-Mail serves at Delhi and Bangalore and are named as *csird* and *csirb* respectively. The *csirb* is linked to *csird*. The laboratories CFB, NPL, CISR HQ, SERC Ghaziabad, CDRI Lucknow are the user nodes registered with *csird*, while NAL, CMMACS, RRL Trivandrum, CECRI Karaikudi, CLRI and SERC Madras are user nodes assigned mail boxes on *csirb*. Thus these CSIR laboratories (and many more in pipe line) are able to exchange messages among each other on the same mail node and also across the assigned mail node. INSDOC, New Delhi has developed expertise in establishing E-Mail facilities. With the help of NET WORKING TEAM, INSDOC is engaged in setting up of USER NODES or MAIL NODES for electronic Mail in CSIR laboratories and institutions on SIRNET.

T.K. Mukherjee

## Numbermasher developed

Personal Computers can give the performance of a supercomputer with a plug-in attachment developed by scientists at Bath University in South-West England, according to British Science and Technology News. A team at the University School of Electronic and Electrical Engineering has produced what is known as an accelerator board which is linked to a PC to upgrade its performance to a level approaching that of a Cray supercomputer.

Suitable for plugging into a standard is a socket on any PC-AT (286, 386/387 or 486), the board is available in 33 and 40 mhz versions to boost the PC's performance by 80 mn floating point operations a second. It also provides 8

megabytes of high performance memory and this can be further upgraded to 32 megabytes. The accelerator board, known as the number smasher-860 is based on Intel's power 1860 64-bit microprocessor.

## Refresher Courses in Library and Information Science

The Academic Staff College of Aligarh Muslim University, Aligarh has conducted Refresher Courses in Library and Information Science for the Central and Northern Regions on (i) Trends and Development in special librarianship (ii) Information Management and (iii) Trends in Library Management during November 1990 to March 1991. The Course Coordinators were Prof. Mohd. Sabir Husain, Mr. Almuzaffar A.G. Khan and Mr. Shabhat Hussain respectively. Shri P.C. Bose Head, Agricultural Research Information Centre of ICAR acted as one of the Resource Persons and delivered lectures on (i) Bibliographic data-base: AGRIS (ii) Bibliographic data-base: CAS (iii) Organising Agriculture Library System: An overview and (iv) Organising Agriculture Library with special reference to India.

The Courses were sponsored by U.G.C.

P.C. Bose

## Personalia

Mr. Roshan Raina, Librarian, Indian Institute of Management Lucknow has returned after his six months study visit abroad. His visit was sponsored under the Fulbright-Hays Act of the U.S. In USA, he worked, at the Syracuse University, where he audited five courses viz. Information Networking, Telecommunications for Information Managers: National and International Information Policies; Office Information Systems Design and Management and Online Retrieval Services.

## Forthcoming Events

### *Seminar on Public Library Movement*

The Directorate of Public Libraries, Govt. of Tamil Nadu and Raja Rammohun Roy Library Foundation, Calcutta are organising a national seminar on 'Public Library Movement : Concepts and Strategies' from 19-21 April, 1991 at Madras. For further details, please contact :

The Librarian  
Connemara Public Library  
Pantheon Road, Egmore  
Madras-600008

*Dr. S.R. Ranganathan Centenary Year, 1992*

The Sarada Ranganathan Endowment for Library Science, University of Madras and Madras Library Association are organising the Second International ISKO Conference titled 'Cognitive Paradigms in knowledge organisation' from 26-28th August, 1992 in Madras.

*For further information please contact:*

Mr. S..N. Kumar  
Conference Secretariat  
5-Sivaganga Road,  
Madras-600034

## Book Review

Bose H : Universal Decimal Classification : Theory and Practice. Revised second ed. New Delhi, Sterling, 1991. viii+192 p.

Those who are new to the intricacies of the UDC scheme, will be baffled at its formidable array of signs, subdivisions, auxiliaries, series, and various devices for the formulation of class numbers. This book, which serves as the manual to the latest UDC schedule BS 1000 M (1985), explains these devices and makes the approach to it easy through systematic sorting, arrangement and application of all that goes to constitute the schedule. The description starts from the base which include the DDC system and allied schemes moving to the UDC itself.

Apart from it, unmerous examples have been given whereby one learns how to formulate class numbers for complex subjects and also the method of doing it. At the end, it proposes an indexing system for the construction of a subject catalogue to an UDC classified file based on computerised permutation of keywords.

The book, in my opinion, will prove invaluable to students and useful to library professionals. Those who went to put their records in a systematic order will find the book useful.

N.K. Wadhwa