Current Awareness Service in Dissemination Scientific and Technical Information : A State of the Art

Y. M. PATIL*

Current Awareness Service (CAS) plays a vital role in dealing with ever increasing avalanche of scientific and technical information. The objectives of CAS are to bring to the notice of users of the current technical literature and to supply it before it becomes obsolete. Basic aspects of CAS are presented and various presentation formats are discussed. Lastly, some aspects of effective usage of information are highlighted.

Introduction

Scientists are unable to keep pace with unprecedented growth of Scientific literature. Periodicals are the main channel of information communication. The increased R & D activities resulted in publication of more number of periodicals both by professional societies and commercial firms.

On account of proliferation of scientific journals, it has become very difficult for research workers to keep sufficiently conversant with all published literature even in their narrowest field of specialization. This led to the emergence of secondary periodicals like abstracting and indexing services. This interim service was good enough for research workers to know about the recent developments in their field. But considerable time delay is observed between appearance of an article in primary journal and its consequent coverage in secondary services. The need for timely dissemination and comprehensive coverage of current information was felt and the resultant effect was emergence of a new breed of information service called "Current Awareness Service" or 'Alerting Service", etc.

Scientists Approach to Information

A Scientist's use of information arises from four recognised needs.

The first need is to know about recently published literature both in specific as well as peripheral areas, the awareness of which is necessary to enhance meaning to a particular research work which is in progress. This need to keep uptodate with the current progress of scientist's field is called *current approach.*

The second need is for some specific item of information which is vital to scientist's experimental or observational work. Such an item of information may consists of data, formulae, solution to

*Documentation Officer, National Bureau of Soil Survey & Land Use Planning, ICAR, Shankar Nagar P. O. Amravati Road, Nagpur-10, India.

equations, an explanation for an observed phenomena, etc. This need for specific information directly connected with research work is called *everyday approach.*

The third need arises when a research worker starts his work in a new investigation. In this context, he has to look back as to what has been published relating to his field of investigation, for writing review. Thus, the need to browse through all concerned information is called *exhaustive approach.*

The fourth need is to help scientists well informed with information collected at one place and to have quick glance at a stretch is called *catching up or brushing up approach.* Examples in this category are: annual reviews, progress in state of art reviews, etc.

Channels for Current Awareness Service

1. Invisible colleges—Oral communication in conferences, getting reports/ reprints, personal communication, etc. These aspects are not meant for all categories of research workers.

2. Regular perusal of current periodicals issues, abstracting and indexing services, reviews, monographs, etc. constitute documentary information which is meant for all.

The former one provides latest information which is restricted to higher echelon of scientists. The latter channel cannot give entire picture of current developments in ones own field of specialization. Research worker scans only a few core journals though large amount of literature published in other journals. Perusing secondary periodicals could give wider picture of current developments, but they are too slow in publication. These problems were overcome by introduction of CAS to monitor timely dissemination of information about latest developments in science and technology.

Salient Features of CAS

CAS is an alerting mechanism for current information dissemination: it is meant to meet current information requirements; it gives broader views on recent developments with judicious selection; and acts as an indicator to bridge the gap between the appearance of an article in primary journal and its consequent coverage in secondary services. Therefore, ease of use, faster publication and comprehensive coverage are the basic parameters in designing the CAS.

Categorisation of CAS

CAS is divided into four categories, viz., individual oriented, subject oriented, group oriented and discipline oriented.

1. Individual Oriented CAS: The problem of the information explosion is solved by publication of secondary periodicals and particularly by CAS. Modern techniques are exploited for faster dissemination of information and as a result individual oriented CAS has come into practice. The advances in computer, telecommunication and reprographic technologies and their applications in information handling have made tremendous effects on traditional technique and a new method i.e., personalised current awareness service or SDI (Selective Dissemination of Information) has emerged to link pertinent information to potential user. The existing data bases like

AGRIS, INIS, COMPENDEX, INSPEC, etc. are used to provide SDI services.

2. Subject Oriented CAS: Subject oriented list of references are arranged in some order so that user of documents can refer the listing under specified area of interest. An example under this category is Chemical Papers published by Chemical Society, U.K.

3. Group Oriented CAS: It gives contents of journals in a wider spectrum of science and technology. The ISI, USA published Current Contents in six series covering different subjects wherein content pages of current issues of journals are reproduced and arranged in alphabetical order for easy browsing.

4. Discipline Oriented CAS: This category covers entire field of study like physics, chemistry, biology, etc. The examples are abstracting and indexing services—like Physics Abstracts, Chem Abstracts and Biological Abstracts

CAS Presentation Formats

There are various presentation formats compilation of CAS bulletins at l national and international levels. Althou wide variations are observed, the basic a is to have current approach to informat overcoming the time delay and ease browsing.

Generalised characteristics of CAS presentation are

(1) entry element, (2) arrangement, and (3) physical form. Entry element is further divided into: contents by journal either by facsimile reproduction or by recomposition; broad subject heading: permuting words in the title; under names of divisions, projects; classified arrangements; or combination of any two or more of the above mentioned formats, as given in the figure 1

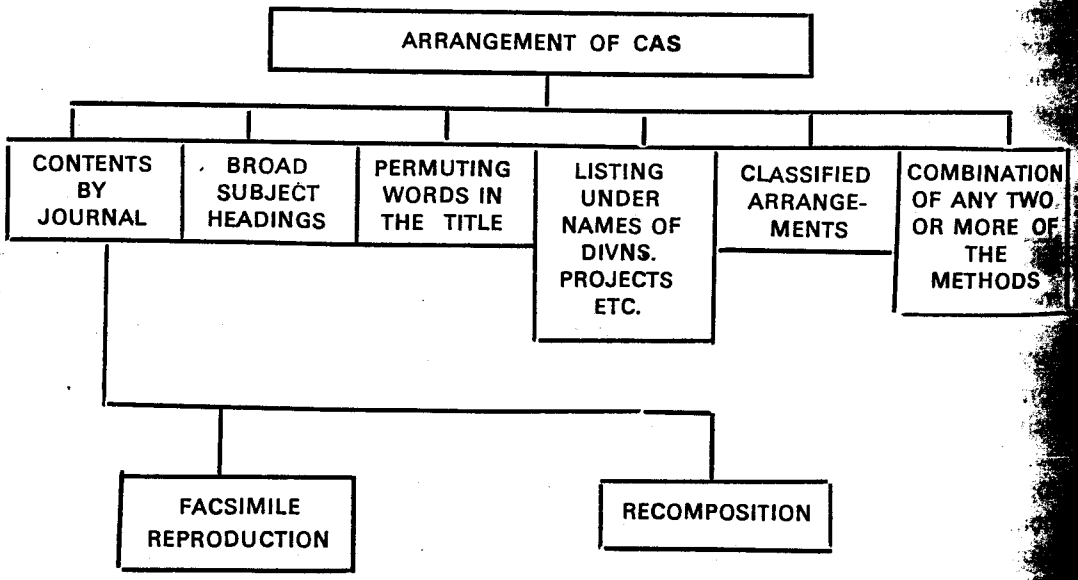

FIG. 1

Contents by journal—Of all the available methods, it is easiest for browsing current information wherein contents of current periodical issues are reproduced and arranged in some order for easy and quick perusal. The production of content page is either by facsimile reproduction or recomposition, which have their merits and demerits in the process of compilation.

Facsimile Reproduction: In this case, content pages of current periodicals are reproduced eliminating efforts in composition, proof reading and possible risk of errors. The faster dissemination of information can be achieved with least expenditure and minimum efforts. Originality of individual content pages are preserved wherein it is not possible to eliminate unwanted matter. As a result CAS list becomes a collection of contents pages with wide typographic variations, layout and display and some amount of space is likely to be wasted. It does not fulfil any search strategy for required information. The example of this category in inernational level is 'Current Contents' embracing wider spectrum of science and technology.

Recomposition Method: In this method deletion of unwanted matter and addition of missing elements can be incorporated maintaining uniform typographic pattern. As a result considerable economy can be achieved in usage of printing space, since matter can be compressed to the extent possible.

Arrangement of contents by journal is quicker and demands little intellectual effort. Compared to facsimile reproduction, recomposition is time consuming, means extra time and delay in reproduction together with the risk of error which invariably occurs.

4. Listing Under Broad Subject Headings: Each article is taken as a single unit for listing under specific headings. The subject readings so chosen will reflect subject interest of the user and helps to scan interest areas. In local CAS list, subject leadings will always match the user's interest. The best known examples are: Current Papers in Chemistry', 'Current Papers in Electronics & Control' etc.

Arrangement Under Names of Current Research Projects: Such an arrangement is followed in local CAS which reflects immediate needs of scientists working in the organisation. The references are listed under a set of predetermined specific subject leadings which reflects the interest of research carried out in a particular organisation. The effective usage of the list can be attained if the selection of items is done in cooperation with the research staff of the organisation. Also, any changes in R & D activities of the organisation can be reflected in the local CAS list by allocating the new subject headings deleting the older ones. This flexibility can be carried out only in the local CAS list. As a by-product of local CAS list, personalised current awareness i.e. SDI services can be undertaken.

Arrangement by Permuting Significant Words in the Title: In this case every relevant article is listed alphabetically by each meaningful word in the title. For convenience, the full title is given at each listing eliminating any need for cross referencing.

The best known example is 'Astronomy & Astrophysics Monthly Index'. However, there is a drawback in this method i.e. the user has to formulate search strategy for

searching required information. The very basic function of CAS is to provide easy access to current information and browsing through such an index is time consuming. Moreover such lists are produced by computer, it is difficult to go through such lists to find required information.

Classified Arrangement—In this method, scattered information is brought under a specific class number. Any scheme of classification used should be very dynamic to incorporate new developments in the chosen field.

The shortcomings of classification scheme are: classification of micro documents and individual journal articles is time consuming; if classified list is voluminous it requires an alphabetical index which results in further delay in compilation; any scheme of classification used lags considerable time behind the development of a particular field; CA list is prepared on seeing the titles alone, hence it is difficult for accurate classification. Since CAS is meant for current approach to information, the very usage of classified arrangement is questioned.

Combination of any two or more of the above methods—Current papers in physics is a hybrid method wherein items are featured under broad subject headings. Under these subject headings listing is by titles of host journals and issue numbers. Under titles of any periodicals the sequence of articles in it is the same as is found in contents page of that issue. In effect the contents page of periodicals like "Physics Review", would be found under various subject headings where as full contents of a periodical like Journal of Accoustical Society of America would be found under subject headings ACOUSTICS. Thus a combination of two methods ie. tents by journal and broad subject headi

Some Aspects in Effective Usage Current Information: Any new aspe thought over in designing of CAS shou be done taking into cognizance how be the user requirements are fulfilled an every effort should be made to minimi time-lag between appearance of an article primary journal and its coverage in such service. In any case, certain inbuilt desig parameters like speed, comprehensive coverage and ease of use have to be kept mind while designing CAS.

In order to minimise time factor in com pilation of CAS list, contents pages of th journal as a prime requirement should b exploited by treating it as an individual un and a marketable commodity so that acces to it can be had in the publishing market lik journals.

In this context it is suggested that the publishing houses of scientific journals should air mail content pages of journals to those libraries who subscribe the journals in order to disseminate information by in corporating the same in the local documen tation list. The journal will be received afte 3-4 month by sea mail and the air mailed content page will serve as an intermitant media for current information communi cation.

Also, while subscriptions are entered annually, resource sharing concept among local cooperating libraries should be ventur ed, wherein core journals of one institute may be peripheral interest to other institute and vice-versa. The content pages

suggested above, when received, can be circulated among co-operating libraries.

In addition to main journal, some publishers are also publishing microfilm editions. In a co-operative venture, one library may get Microfilm edition by air mail and the other one can get hard copy edition by sea mail so that fast access to current information by using microfilm edition is ensured.

Each individual unit of an article should contain full bibliographic details like name of the journal, year, volume/issue number, inclusive pagination, full address of the authors, broad subject headings and brief abstracts of the paper with title, as the full content page.

In order to achieve the above norms in the content page, a close cooperation between author and the journal editor is essential. It is generally observed that editors of most of the journals lay down in a note to the contributors' that in addition to providing full bibliographic details,, authors should also provide keywords soon after the abstract so that indexers/ abstractors burden is greatly reduced while indexing current literature.

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