

## COOPERATION BETWEEN SPECIALIST USER AND DOCUMENTALIST

A NEELAMEGHAN

[Indicates that the efficiency of documentation service will improve if there is good cooperation between the documentalst and the specialist user. Lack of sympathy and effective cooperation from the side of the specialist may be due to the absence of any direct indication to him of his part in the picture. He may not have even been made aware of the role of documentation in increasing productivity in his work. Emphasises that the documentalst should take action to invite the cooperation and help of the users. The importance of documentation especially in research and development work should be emphasised. The lines of cooperation which the specialist can extend to the documentalst are indicated. Incidentally, some of the approaches of the documentalst to invite the cooperation of the specialists are delineated.

The paper is based on a lecture delivered to the scientists of the Defence Research Laboratories on 12 November 1960, at a Study Meeting on the 'Role of Documentation in R & D' organised by the Electronics and Radar Development Establishment, Bangalore.]

### 0 Introduction

A persistent issue which confronts the documentalst is the question of the effectiveness of his service to the specialists in the organization he serves. There is a general feeling that, despite improved techniques of library science, documentation work and service, and the initiative taken by the documentalst to extend his service, only a small percentage of the users in an organisation seem to benefit from and appreciate the value of documentation. It is not uncommon for the scientist, the technologist, and the managerial staff to consider the library as a luxury or a show piece. It is often cynically held by them that documentation techniques and activities often hide away the information they need and scare away the seekers. Many specialists hold that their reading materials are supplied only in the form of abstracts and digests made by someone in whom they hesitate to place confidence. According to an extreme form of this cynicism the more enterprising documentalst plucks away from the specialist even some of his favourite files and submerges them in a documentation system which the specialist user hardly understands.

This is not a very encouraging state of affairs. For, the aim of documentation is to help the specialist with all the relevant information and knowledge he needs at the moment in order to conserve his time and energy for planning, control, research, and development work.

A solution to the problem can probably be arrived at only by discussion between the documentalst and those who are dissatisfied and those who are suspicious of documentation services.

The unproductiveness of the documentation service is often traceable to the fact that the documentalst has not developed adequate contact with the

users of his service. The suspicion of the specialist is often due because he had no chance even to know who provides the services, what more can be got out of the services, and what will be the difference in the progress of his work and that of the organisation if there were no adequate documentation service.

In this essay, some of the lines of cooperation which the specialist in a research and development organisation can extend to the documentalist so that the latter's efforts are more effective and fruitful in the service of the former, are indicated. The talk on which this paper is based was addressed to specialists who use documentation service or who are potential users. But the documentalist may find mentioned incidentally the areas and approaches to invite the cooperation of the specialist.

The term 'specialist' is used to include the scientist, engineer, technologist, and managerial staff.

### 1 Outstanding Features of Mid-Twentieth Century

If a gallop poll were to be taken to name the outstanding features of the mid-twentieth century which have contributed most to raising productivity, the items that can be predicted to come up high in the ranking are :

#### 11 NUCLEAR ENERGY

The successful release and control of nuclear energy has given us so much more energy to do the world's work ;

#### 12 PHARMACEUTICAL RESEARCH

Research in this field has given us some remarkable drugs for diseases which were once considered largely fatal. Consequently the expectation of life has increased, and there has been a significant reduction in absenteeism due to illness and hospitalisation ;

#### 13 DOCUMENTATION

It has added a new dimension and perspective to information storage and retrieval which has increased considerably productivity in intellectual work ; and

#### 14 AUTOMATION

Automation has increased our capacity to use tools, and has released the more capable from repetitive and routine work to pursue work in the intellectual plane.

These developments received a tremendous fillip during World War II and in the last two decades they have been subjects, perhaps, most written upon.

### 2 Documentation has come to Stay

The importance of documentation in aiding the progress of a nation is no temporary phenomenon. So long as man desires to progress—whether it be in the sciences or in the arts, whether it be in the intellectual plane or in the material plane, whether it is merely to satisfy an inner urge or it is his persistence to find ways and means of making life a little more comfortable—there

will be need to communicate information. Documentation will continue to be a vital link in this communication, although, at present, we cannot predict what shape it will take or what techniques it will adopt in the years to come.

### 3 Productivity In Research and Development

#### 31 SPECIALISTS ARE A PRIVILEGED GROUP

In a sense the specialists, particularly the scientists form a privileged group. They constitute a very small percentage of humanity. They are, perhaps, endowed with a particular bent of mind—a scientific attitude, a compelling but rational curiosity, a higher intellectual calibre, and society has provided the environment and opportunity to nurture and develop this attitude and ability. The achievements of science and technology have been so spectacular that the vast majority of humanity look up to this small band of men to make life a little more comfortable and to lead mankind forward.

#### 32 AN OBLIGATION

Any conscientious scientist, naturally, feels the responsibility to endeavour to the best of his ability and in some way express his gratitude to society for what opportunities it has given him. He feels obliged to be most productive, that is to make the best use of the time, money, material, human, and thought resources available to him. In this context, the Indian scientist has a great responsibility. For, the vast majority of our people still lack the basic needs of life. This is unfortunate in a sense. For historical reasons the country had been in a state of cultural exhaustion for the last three or four centuries when several other nations have been pushing forward in ensuring higher standards of living to their citizens.

#### 33 A CHALLENGE

There is, however, a fortunate and challenging aspect to the situation. Population pressure is growing without relax. There is a wide gap between the availability and distribution of natural resources on the one hand and the rate of growth of population and its concentration on the other. The needs of the society are, therefore, immediate and pressing. Basing our calculations on the achievements of science and technology we, have hopes of making good the deficiency by converting near-natural and even unconsumable materials into consumable commodities. To catch up in good time with those countries in the front line of industrial development, what is needed is vigilance, scientific management, and highest productivity in every phase of our work. Whether it be the actual production of commodities, or the development of technology to increase production, or applied research which supports technology, or fundamental research which is the basis for applied research, 'productivity' has become our watchword. Research itself has to be so managed that it is most productive of the greatest benefits to society.

### 34 TEAM RESEARCH

In this context it has been realised that the directed cooperative team research is the more productive form of research management. We can no longer solely depend on the sporadic, though at times outstanding, contributions of a few men of genius. There is so much intensive specialisation that in team work alone the specialised knowledge in diverse fields can be brought to bear on the project in hand. Further, the number of documents even in a very narrow specialised subject is so great that no one specialist can hope to be fully aware of all the current advances even in his narrow field of specialization, not to mention of the progress in related and other subjects. Yet the advances and discoveries in one field produce repercussions in and influence other fields, sometimes in fields apparently unconnected. The first appeal of the documentalist to the specialist is to take him as an equal partner in the team, so that the team's work becomes more productive.

### 35 DOCUMENTATION AND DECISION MAKING

Each stage in a research and development project has an intellectual or decision making phase and an executive phase. It is generally conceded that the basis of all decisions is information, and that the decisions we make in a given situation are as accurate and appropriate as the information we have on the subject or situation. Thus by providing the right information at the right time to the right person in the right manner, the documentalist helps the specialist to take the most productive course in the execution of the project. While decision-making is a subjective process to be left to each specialist, it can be accelerated and the decision made most appropriate to the situation by making available to the specialist all the relevant data on the problem.

### 36 DIVISION OF LABOUR

It might be suggested that some of our scientists may do the scanning of the documents and pass on the information to their co-workers in the laboratories. For, the specialist has the particular advantage of a good subject background. But the country is short of scientists even for research and development work and therefore enough of them cannot be spared to do the literature scanning and information work which is by itself a full time job. The time and energy of the specialist should be conserved for research work in the laboratory. Further, documentation has now developed into a distinct specialised discipline with its own theories and techniques that its mastery requires as much intellectual calibre as that necessary to become a leader in any other subject field. The preparation to master it requires as much time as that needed to become proficient in any other subject. Therefore, there should be two different sets of people to do the two different kinds of work. The better arrangement will be a division of labour between the laboratory personnel and the library personnel. The documentalist should naturally be a specialist in documentation work. But he must also have a good knowledge of the various subjects with which the laboratory personnel are concerned.

Then alone he can be of real help to the specialist in bringing into use by them the newly emerging thought in a pinpointed, exhaustive and expeditious manner in spite of the spate of documents.

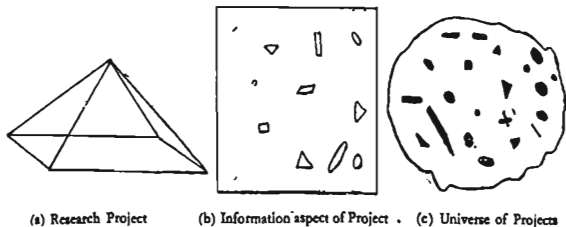
#### 4 DOCUMENTALIST AS DECISION MAKER

The documentalists himself is a decision-maker. For, from out of the millions of documents that continuously flood the world, he makes a judicious selection of a few of them; he also decides as to who all in the organization he serves and at what time they should become aware of the contents of the documents he has selected. These are important decisions. For, if the documentalist is not ever vigilant or even a bit late in the delivery of the information, it may result in unnecessary and avoidable duplication of work in the laboratory. If the information he furnished was not correct, it may prove disastrous in the user's decision-making. Again, if the information is not expressed or presented in a particular form, the reader may not be able to absorb it.

#### 4.1 MODEL

If the possession of adequate information is the essence of decision-making in the case of the scientist and technologist, it is equally true in the case of the documentalists. A model will make this clear.

Fig. 1 FACETS OF A RESEARCH & DEVELOPMENT PROJECT



(a) Research Project

(b) Information aspect of Project

(c) Universe of Project

Fig 1 (a) represents a research and development project in the form of a four-sided pyramid. Each of the faces of the pyramid represent the following aspects of the project :

- 1 Financial implications ;
- 2 Equipment and materials needed ;
- 3 Personnel problems ; and
- 4 Time factor involved in the execution of the project ; and
- 5 The base of the pyramid represents the "Information" aspect of the project. The documentalists is in the main concerned with this aspect of the project.

Fig 1 (b) shows the base of the pyramid separately in a plane parallel to the plane of the paper. The hollow shapes within the square are the "information requirements" of the project. The different shapes correspond to the different types and kinds of information required which are to be met through different

kinds of services—Bare documentation list, abstracts, trend report, digest, data, material for a popular write-up etc.

Fig 1c represents the universe of documents. The shaded figures within the circle are the various kinds of information available to the documentalist.

#### 42 TASKS INVOLVED

The documentalist picks out the appropriate pieces from the universe of documents, matches, adopts, and fits them exactly into the hollows in the base of the pyramid. This implies that the documentalist should :

- 1 Know the specific needs of his clientele individually and severally ;
- 2 Keep himself adequately and continuously informed of every document published on the subjects with which his organization is concerned ; and
- 3 Procure and organize—classify, index, etc—the documents, to facilitate efficient service ;

While the documentalist is trained to perform tasks 2 and 3 efficiently, his knowledge of the exact requirements of the users depends on the extent of co-operation between him and the specialist.

The documentalist would take all necessary steps to be conversant with the organizations programmes and the needs of the individual specialists. This will be facilitated if he has the sympathy, understanding, and cooperation of the specialist.

#### 5 Internal Sources of Information

Some of the internal sources for assessing the information requirements of the specialists are :

- 1 Direct contact with users ;
- 2 Technical meetings ; production meetings ;
- 3 Seminars and conferences ;
- 4 Documents (Internal) ;
- 41 Research reports ;
- 42 Departmental reports ;
- 43 Interdepartmental reports ;
- 44 Correspondence files containing technical and other information ;
- 45 Conference papers ;
- 46 Other publications of the organization ;
- 5 The documentalist should also have full knowledge and facility of access to the various documents filed in other departments of the organization.

#### 51 OTHER IMPLICATIONS

Such organization of the internal records has wider implications. These records are the primary sources of information on a variety of matters relating to the institution—on current research, proposed projects, plans, economic and business information, etc. Some of the records may be of temporary value, but others may become archival records. Filing a copy of each of them in the central documentation division will not only provide the documentalist an intimate knowledge of the organization's affairs, but he will also be in a position

to organize he records properly to facilitate the retrieval of information contained in them.

#### 52 HELP FROM DOCUMENTALIST

Further, awareness of the documents filed in the other departments of the organization helps, in the first instance, to minimise duplication of less used material in the central documentation unit, and secondly to direct enquirers or to procure for their use, relevant documents available in the departments. Again, the documentalst can help the departments in the proper organization of their files and records ; for, he has the necessary training and experience.

#### 53 SURVEY

##### 531 NEED

Another method of assessing the needs of users is by conducting a survey. Certain general principles and techniques of documentation are applicable in most libraries. But there are specific needs and conveniences of individuals to be met at the local level in the particular institutions. To meet these specific needs, the documentation services may have to be specially adapted. Further, it may be necessary to assess the adequacy of the documentation service at convenient intervals. For, the subject emphasis in the organization may change, specialists may change, new documentation techniques may have been developed, or other changes in the situation may have occurred.

##### 532 METHODS

Survey methods such as issuing questionnaire, interviews, checking diaries kept by users, operation research methods, or a combination of any of these, may be adopted for the purpose. Obviously such surveys will be facilitated and the interpretation of the data made more reliable if the readers who are approached extend full cooperation. They will cooperate if they realise that such a scientific approach to assessing user-needs can lead to the adoption of alternative methods of service to suit the needs and convenience of particular individuals. For instance, particular groups may prefer to have information presented in summary form or as digests ; others may prefer trend reports from time to time ; still others may like to have factual data collected and kept up-to-date on particular topics of interest to them ; yet another group may prefer to have a documentation list with abstracts, and so on.

##### 533 APPARENTLY TRIVIAL POINTS ALSO IMPORTANT

Even apparently trivial points may have important significance to an individual reader. For instance, a specialist may like to have the periodicals for his reading sent to him at a particular time of the day. Any other time might mean his not being able to peruse the periodicals for one reason or other.

Again, a specialist may be subscribing to some periodicals by himself for he may be getting them as a member of learned associations. Obviously, if the

documentalist is informed of the particular periodicals thus received by the specialist, the former would not send him the same titles from the library. obviously there is saving in this.

Further, a scientist may find that he is not able to peruse the 10 or 15 periodicals that come to his table every week. He is not able to adjust his reading time so that he may become aware of as much of the current writings on his subjects as he would like to. The reason may be simply that he has not been able to sort the periodicals in a priority sequence. If the documentalist has the information on the specific subject interest and the various periodicals received by the scientist, he can sort out the periodicals in such a way that in a minimum reading time the scientist can pick out the largest number of articles relevant to his field of interest. For, the documentalist knows which periodicals usually carry larger number of papers on the subject and the occasional papers appearing in the other periodicals can be taken care of by the documentation service.

#### 54 WIDER IMPLICATIONS OF SURVEYS

There are wider implications of such surveys of document usage and information gathering habit among specialists. While various documentation techniques and services have been developed in the last two decades or so, only in recent years thinking has been directed to making a scientific approach to the connected problems. Two important approaches have been : (1) To compare the efficiency of some of the available documentation techniques, and (2) to study the information gathering habit of specialists. Here we are more concerned with the latter type of study. Some of the well known studies in this direction are those of the Case Institute of Technology Operational Research Study, Columbia University, Bureau of Applied Social Research, Saul Herner and Co, Department of Scientific and Industrial Research of UK, and more recently that of the American Psychological Association. Some valuable information have been made available on the basis of which it should be possible to adapt documentation techniques and services to fit into the different information gathering habits of users. For instance, local abstracting is presumed to meet the particular needs of scientists in an organization. But some of the surveys show that while scientists do welcome and depend on the large international abstracting periodicals such as the *Chemical abstracts* a good proportion of them are not very keen on the local abstracts. This indicates a rethinking on local abstracting.

Thus, whether a survey is confined to one organization or covers a larger segment of specialists its success and validity of conclusions resulting from it depend on the extent of cooperation received from those surveyed.

#### 6 Making Enquiries

##### 61 FRAMING THE QUESTIONS

Looking at Fig 1 in Sec 41, it is obvious that unless the documentalist has information on the exact shape and dimension of each of the holes in the base



of the pyramid, he cannot pick out such pieces from the universe of documents which will exactly fit into those holes. It is, therefore, essential that the enquirer poses his question in terms which are co-extensive with the idea in his mind. For instance, if the enquirer wants information or documents on the "Effects of ionizing radiations of 100 to 200 roentgens per day on the deciduous forests of Canada" the problem should be expressed in exactly those terms. More often than not the specialist puts it in broader terms such as "Effect of radiations on plants" etc. If the documentalists does not suspect that the enquirer is actually interested on a much more specific topic, he would come up with a large number of documents on the broader subject. The enquirer would then have to pick out the appropriate documents after perusing them. A great deal of noise factor is thus introduced and consequently there is waste of time and energy both to the documentalists as well as to the enquirer.

#### 62. FACET ANALYSIS IN REFERENCE WORK

The specialist may say that it will be difficult for the documentalists to understand highly specialised subjects. In the long run highly qualified subject specialists-cum-documentalists may be available to staff documentation divisions in order to serve fellow specialists in the laboratory. Even as the situation obtains today, the documentalists equips himself with a knowledge of the highways and byways of the subjects with which the specialists in his organization are concerned. Further, he has the technique to analyse into facets the question and match the facets with the facet-analysed document collection in his library. He can thus retrieve the most relevant documents even if he is not a specialist in a subject to the extent of doing experiments in that field.

#### 7 Guidance in the Use of the Library

Few specialists are willing to accept guidance in the use of the library and library aids. Any initiative taken by the librarian in guiding them to use the library and the library's resources more effectively often faces indifference if not open resentment on the part of the users. The reasons for this unhappy situation are many, but the main contributing factor is that the user is neither fully aware of how effectively his information problems can be handled by the documentalists nor does he know the extent to which the service of the documentalists increases productivity in his work.

#### 71 AN ANALOGY

Let us take an analogy. In the earlier years, a specialist in structural chemistry followed a number of routine analytical procedures in the elucidation of the structure of a compound. Then came the application of ultra-violet spectral methods, and later still the infra-red and NMR techniques for the purpose. These proved valuable aids in the quicker and more accurate determination of the structures of compounds. The chemists soon learnt the application of the techniques; for, it helped him to be more productive.

The techniques soon came to be included in the courses for chemists. The scientist should consider the library's services as an equally valuable instrument in increasing the efficiency of his work. Therefore, the specialist should accept them instead of being allergic.

#### 72 CHANGE IN EDUCATIONAL METHOD NEEDED

Familiarity with the use of the library should have been developed even while one is at school and college. But in the past, we have had few good school and college libraries and fewer trained librarians who could initiate the readers into the proper use of the library and its resources. While the situation is improving, it may take another generation before we can expect a specialist to have already got some idea of a library and the bibliographical tools even as he enters research and development work. For, it calls for changes in the method of education. Even if he gets this nodding acquaintance with the library, there will be need to learn the use of more sophisticated aids and techniques of documentation.

#### 73 A NECESSITY

The documentalist's appeal is that the specialist should consider the learning the use of the library and documentation services on a par, if not as a matter of greater importance, as his learning the scientific techniques essential in his research. There is much to be gained by the researcher.

#### 74 PRACTICAL GAINS

It is not unusual to find that even for simple factual data the scientist calls up the library or depends on some other source for the information, while the reference book containing the information is at hand on his table or in the department. This is because he is either not aware of the information content of the reference book, or he does not know how to use it in retrieving the information.

Further, a postgraduate student who has to review the literature on the subject of his research often finds the mere task of searching the documents difficult and time consuming because he is not acquainted with the tools of literature search. At the same time, he knows only too well that it is most appropriate and educative for him to select and get acquainted with the documents himself instead of passing on the work to the library.

Again, people being what they are, many a researcher, though he has a clear idea in his mind as to what information he wants, is not able to communicate adequately his requirements to the documentalist resulting in waste of time and energy both for the documentalist as well as for the scientist as indicated in Sec 61. In not a few such instances if only the specialist was familiar with the library and document search tools he could have got the needed information quickly by himself.

### 8 Building Document Resources

Documents and readers brought together in intimate contact by a librarian constitutes library service. All the three elements—documents, readers, and librarian—are necessary and equally important. Individually and severally they can make or mar the library service. Therefore, building up an adequate collection of documents is a basic consideration to every librarian. And it should concern the specialists also for, the documents should be relevant to their needs and find use in the organization's programmes.

Selection of relevant documents is one of the library's job. But there are areas such as those dealing with very highly specialised subjects or newly emerging subjects or documents in foreign languages, where the library staff may find it difficult to judge their value to the specialist. In such cases, the specialists in the organization can be of real help. They can also on their own initiative bring to the notice of the library such highly specialised items. Experience shows that help from subject specialists is of considerable value in building up the basic or initial collection in a research and technical library.

### 91 Documentation

For various reasons, in many of the smaller organizations the information unit is understaffed. While the deficiency should be made good as soon as possible, if adequate and fulfilled documentation service is to be expected of it, as an interim arrangement, the research staff can cooperate with the library in documentation work. The periodicals as they are received in the library can be passed on to the subject specialist concerned, or he may spare an hour or so in the day after his laboratory work, or whenever he has the time, to spend it in the library to scan the periodicals, mark relevant papers and or prepare abstracts for inclusion in the documentation list. The library would make cards for the marked items, classify the entries, edit the abstracts, and prepare the documentation list. Many a scientist would be glad to avail of the opportunity to peruse the periodicals as and when received through such planned cooperation a wider circle of readers in the organization benefit.

### 92 Classification

Organization of documents is a prerequisite to the efficient retrieval of information contained in them. The basis for the organization is a classification scheme for the subjects which will show their filiation and has the hospitality to accommodate all except the most turbulent changes in the universe of knowledge. To design such a classification scheme and which will also meet the needs of the specialist users call for a deep knowledge of the subjects. The universe of knowledge is a multidimensional dyanmic continuum. Its horizons are widening faster than even. Changes in the pattern of its growth appear to be as kaleidoscopic as the human intellect can make it. Considering this a documentalst will need, at certain stages of his classification design work the

cooperation and help of the specialists in understanding the newly emerging patterns and the intricate nature of the subject. Such cooperation will help to produce a scheme which will be suitable to a majority of the specialists in the subject. This in turn will facilitate efficient documentation.

### 93 Conclusion

By devoting his whole attention—in training and in practice—to the organization and the service of documents, the documentalist saves much of the specialists time and effort that may be wasted in futile fumbling with the documents to retrieve the needed information. Thus he contributes to the productivity in work of all those whom he helps.

The general lack of sympathy and co-operation on the part of the users may be due to the documentalist not having taken the initiative to solicit their cooperation and help. It may also be partly due to the specialists not having fully realised the significant role of documentation in increasing efficiency of their work. Or again it may be due to the absence of any direct indication of their part in the picture. Any improvement in the effectiveness of documentation service and the full realization of its benefits depend on the close cooperation between the documentalist and the specialist users. In our struggle in effective dissemination of information, this cooperation is the *sine qua non* of success. In the words of Benjamin Franklin "We must, indeed, all hang together, or most assuredly we shall all hang separately."

---