

IMPORTANCE OF INFORMATION AND COMMUNICATION SKILLS IN THE DIGITAL WORLD

K. RAJARAM¹, P. SENTHIL KUMARAN² & S. JEYACHITRA³

¹Department of Library and Information Science, K.S. Rangasamy Institute of
Technology, Tiruchengode, Tamil Nadu, India

²Departments of Library and Information Science, K S R College of Engineering,
Tiruchengode, Tamil Nadu, India

³Departments of Library and Information Science, Urumu Dhanalakshmi College,
Tiruchirappalli, Tamil Nadu, India

ABSTRACT

In the context of scientific information, the first two forms of communication play an important part. In future paperless information system, the third form will play an important role. The oral communication is also called as an informal communication; and documentary communication is also known as formal communication. White has referred to informal communication as interactive, as it involves a direct interaction between the source of information and the recipient. Formal communication, however, is non-interactive.

KEYWORDS: Communication, Formal and Informal Communications, Barriers

INTRODUCTION

Human Communication

Phenomena of Communication

We communicate many things in day-to-day life. Not only information, errors, opinions, thoughts, ideas, experiences, wishes, orders, emotions, feelings, moods, etc. heat and motion can be communicated. So can strength and weakness, and even disease.

Distorters to Communication

There are in addition, the social factors distorting communication; these would include rumours, propaganda and deliberate distortion.

Beyond Language

Even the semantic content of a message changes as it passes from one level to another. There is also what is called 'illusion of exact communication.' Communication is not solely a matter of language. Painting and music are also methods of communication.

Mechanical Systems

Further there are machines that process, store and transmit information. These include automatic calculating machines, information retrieval systems, data bases, mechanical speech recognizers, translating machines, etc.

Communication systems like postal services, signals, telegraph, telephone, telecommunications, newspapers, radio and tele-broadcasting services; roads, railways and other vehicles of transport fall under this category.

Concept of Communication

All the above varied phenomena are represented by one particular word-communication. This makes us assume that all of them have something in common by virtue of which they are represented by the same word. The connecting thread appears to be the idea of ‘something being transferred from one thing or person, to another.’”

INFORMATION COMMUNICATION

In a Broad Sense of the Term

Information communication in a board sense of the term includes not merely transference of information in the conventional sense, but also, the expression of feelings, wishes, commands, desires or whatever it may be. It covers both, the use of natural language as well as voluntary or involuntary feelings, emotions, gestures, etc. thus, one can communicate one’s unhappiness by telling that, he is unhappy or by sighing or groaning or simply by looking sad. One acquires the same information in either case.

Special Features

One’s own stock of information or knowledge is not going to diminish by communicating to other. This is precisely the difference between communicating to other. This is precisely the difference between communication of information and communication of commodities, energy, heat, etc. thus, the ownership of information may multiply but not change hands like a physical commodity. Further, one can communicate information, which he does not have! For example, one’s own behavior may enable others to know him better than himself. In this case the communication is not intentional. Even intentional, the intention may or may not be fulfilled and complexity of communication systems will continue to grow as:

- the number of scientists and technologists increases and hence the output of knowledge; science, technology and industry develop in hitherto undeveloped parts of the world;
- specialization increases while at the same time interpenetration and interdependence of many branches of science also increase; science, technology and industry increasingly become large scale cooperative activities involving the coordination of the work the daily additions of ‘the present’ as it becomes the past.
- the store of knowledge- ‘the past’ – becomes continuously larger with the daily additions of ‘the present’ as it becomes the past .The day-to-day work of scientists and technologists necessitate effective communication:
- to stimulate thought and action by the injection of, and interaction with, other people’ ideas, knowledge, experience and achievements; to promote continuous awareness of what others are doing so that an individual worker (or group) may know of developments in his own special field, in wider fields of discipline, technology and interest, and in science and technology generally;
- to diminish the probability of unwitting duplication of work and to save time and effort; to provide introductory and background information for work in unfamiliar fields; and to provide specific information and data needed for work in hand.

MEDIA AND FORMS OF COMMUNICATION

Communication Media

To quote Hanson again “communication in science takes many forms. Consider the activities of an individual scientist. On a typical day he goes through his post, internal and external, all of it linking him with other people. He talks casually with colleagues, he happens to meet and with one or two others purposefully, some by appointment. He scans a few current journals which he takes from his in-tray, reading an article or two. He looks-up something in a book. He makes and receives phone calls, asking questions or answering them, expressing opinions, giving and receiving instructions, communicating decisions. He has a discussion with a visitor, or makes a visit. He reads a report, refers to a specification, and consults some catalogues of plant, equipment or material. Within the past few weeks, if not today, he is likely to have been to a professional meeting, visited an exhibition and attended a committee or group meeting... this communication pattern, shaped partly by his duties, partly by habit, and affected by fortuitous events but seldom planned, may not be efficient nor adequate to his needs, but as things stand it is sensible and effective up to a point.”

Form and Channels of Communication

Following is a list of forms of communication with channels of disseminating information. Though they are given in isolation here, quite often two or more channels may be used together for effective communication and the channels of dissemination may form a series of alternative routes, through the total communication system.

- **Oral**
 - One person to one person, e.g., a talk face-to-face or by phone;
 - One person to several, e.g., a group or committee meeting;
 - One person to many, e., a speech at a meeting;
 - Several persons to several, e.g., group discussion, conversation;
- **Documentary**
 - Personal, e.g. correspondence – external and internal;
 - Published (usually printed), e.g. journals, books, pamphlets, specifications, catalogues, data compilations, graphics;
 - Unpublished (including, semi published, usually duplicated), e.g. reports, these circulars, etc;
- **Audio-Visual**
 - Exhibitions (including the one-person-to-several types of communication);
 - Demonstrations;
 - Personal observation : purposeful, e.g. our of works; seen by chance;
 - Films; special showing and public showing;
 - Television: purposeful and public showing;

- Visual aids to oral and written communication.

Formal and Informal Communications

The formal and informal communication roughly corresponds to a division into written communication and oral communication. But it is generally treated as informal, rather than formal. In the same way, professional conference is both formal and informal – it is formal in the sense, it involves formal organization. There will be presentation of formal papers and it frequently results in some formal publication; it is informal in the sense, it provides greater opportunity for personal communication among individuals. Thus, the better classification could be documentary and non-documentary communication forms.

Barriers to Communication

The barriers to communication of information can broadly be grouped into the following categories:

- Institutional impediments;
- Financial;
- Technical;
- Linguistic;
- Social and psychological; and
- Administrative and political.

Institutional Impediments

There are three basic institutional impediments.

These are:

- Status (of a person and organization)
- Structure (Hierarchical); and
- Secrecy (Fear of Losing).

Status: Information is made available on the status, the person and the organization enjoys. Otherwise in many cases, it will difficult to get the information. Further, in mainly flows among equals. When one provides information, he also expects to receive some useful information in exchange, or else, one may pass-on information for expert opinion to a peer in the discipline or profession. Thus, it is very difficult for persons of lower status to enter into such networks of information. Inter- institutional relations and restrictions also play an important part.

Hierarchical structure: within an organization, there will be two way information flow – hierarchical and collateral.

The data or facts are gathered by the persons lower in the hierarchy, and are communicated to the top management in an upward flow. At the top, the information is exchanged in a collateral fashion among the members of the top management, deliberated and decisions taken are communicated again in a hierarchical manner through downward flow.

Thus, there exists a regular information flow in an organization but, every piece of information is not available to everyone. In fact, it may not be desirable also. However, the success will depend upon the correctness of the information, right interpretation, and right flow. If there is a problem anywhere in the hierarchy, it will lead to fruitful decisions. ‘A decision is generally no better than the information to which the decision is generally no better than the information to which the decision maker has access’

Secrecy: Kabesh says “management and governments have often failed to appreciate the importance of information in the pattern of modern economic process. It has been suggested that one reason for this is that managers and officials sometimes fear their own secrets will be lost in the process of gathering of information services can do, and ignorance of what information services can do, and ignorance of the value of information to a particular organization. It may be because of traditionalism what my father did is good enough for me, so why should we bother to change coupled with a real fear of progress and forced change. Or it may be just a matter of laziness in facing up to the needs of the age.”

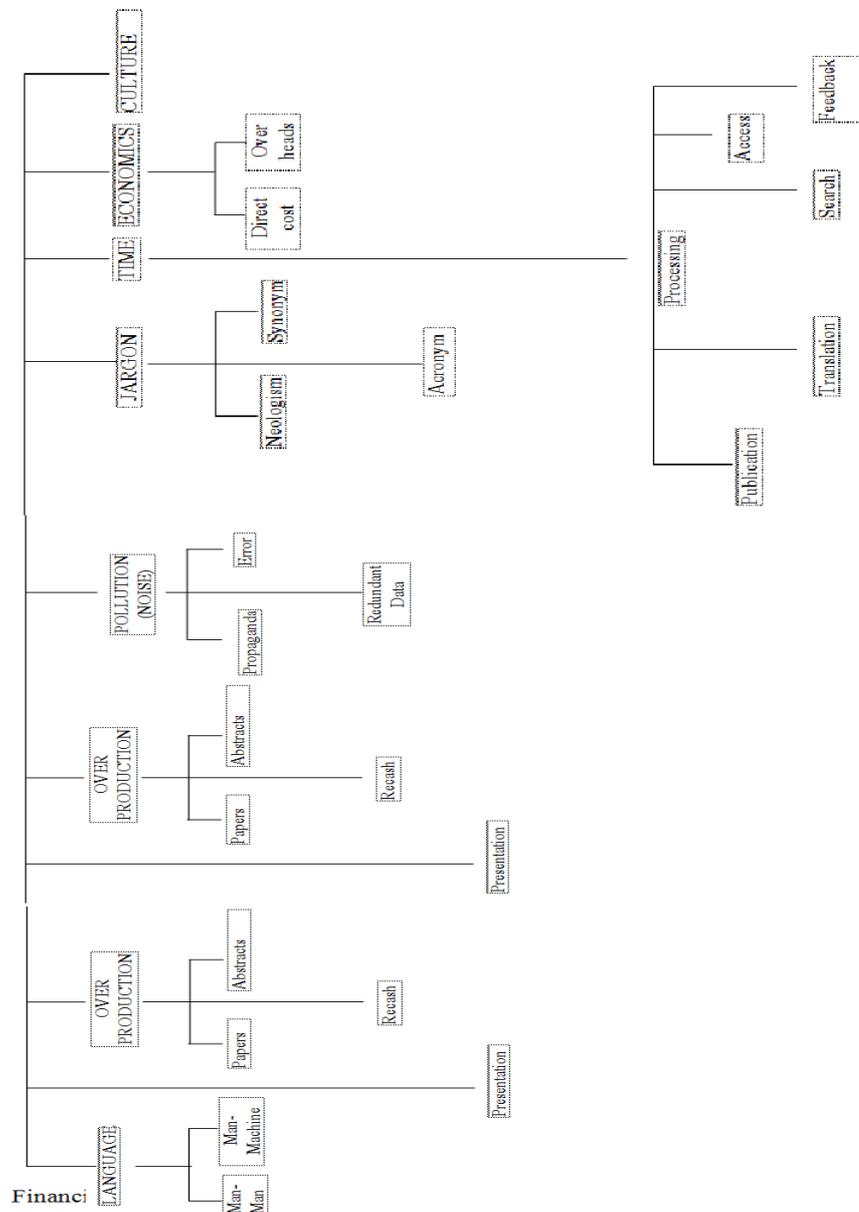


Figure 1

Financial barriers increase the cost of information. A list of these barriers is given below. Though all of them will have an impact on domestic information market, some of these will be of greater significance in acquiring scientific and technical information from abroad.

- Rising costs in production of documents;
- Postal and other transportation charges;
- Costs in running libraries and information centres;
- Currency exchange and import controls;
- Dwindling budgets;
- Royalties, etc.

Rising costs in production: the costs in production of documents are rising every year. This is more so in developing countries. In India the cost of paper has gone up by 55% in just one year, i.e., 1988-89. The Dewey Decimal Classification, Edition 18 was costing Rs. 360 in 1971. Edition 19, costed Rs. 999/- in 1979. The same edition, Indian reprint was costing Rs. 1800 in 1980. Edition 20 released in 1989 was costing Rs 4700. Whereas, the edition 21, released in 1996 is costing over Rs. 15,000. Rising costs not only reduce the purchasing power, but also, reduce the production of the documents. Both will reduce, if not prevent, the communication of information.

Costs in running of library and information centers: the costs in running of library and information centers have been increasing steadily from time to time. Costs of books, salaries of staff and overhead, costs are escalating heavily, making it difficult for libraries to provide free library services. UK and USA are shifting from service to fee based service, when this is the case with developed countries, we can very well understand what will be the position in developing countries. This shift from free service to fee service is not at all healthy and this may reduce the number of users and frequency of use.

Currency exchange and import controls: in some countries individuals or institutions have difficulty in obtaining convertible currency. In some countries, the efforts needed are so much that the users have to severely reduce their demands and remain highly selective. The UNESCO and other purchase- coupon schemes do provide a way round this barrier.

Some countries have import restrictions for certain classes of literature and from certain foreign countries. This is yet another impediment coming in the way of free-flow of information. Suitable national policies are to be evolved to overcome these problems.

Dwindling budgets: there is explosion of literature at one hand and at the other, the dwindling of library budgets. Even though, one is highly selective, there is much greater quantity of highly useful literature. As to the fifth law, "library is a growing organism" the books, readers and staff grow from time to time. The growth warrants increase in library budgets. But, unfortunately, the situation is quite opposite. With the escalation of prices of documents, needs of users and rise in pay packets of staff, the library budgets are dwindling, as a result many services are to be curtailed if not totally dropped. Libraries and information centers should try to evolve methods for having a continued flow of funds.

Royalties: this problem is not there in many of the developing countries. However, it is one of the serious

problems in some societies. With the increasing use of computerized databases and other electronic media in information transfer, the payment of royalties is becoming a major financial issue for libraries and information centers.

Technical

The major technical impediments in the flow of information are:

- Poor presentation of documentary products
- Less number of copies;
- Lack of special systems;
- Complicated systems;
- Lack of awareness (among users);
- Under – qualified staff;
- Lack of proper organizational structure; and
- Lack of bibliographical control.

Poor presentation of documentary products: the quality of information product plays an important role in the communication and access to information. The common problems associated with the quality of information products are: less number of details, poor legibility, less number of references, a bad index and noise or pollution (in the form of error, redundant data or by propaganda).

Less number of copies: if the document is unique, it is treated as property and the access to such document, the less it is put to use. Same is the case with documents, of which the numbers of copies available are less.

Lack of special equipment: certain classes of documents need special equipment for reading or viewing. For example, microfilm/fiche need special readers, tapes and discs need players, etc. lack of these special equipments, prevent the users from having access to information, in spite of having the document with them.

Complicated system: libraries and information centers are mechanized institutions. Mechanized systems are dependent ones. They need someone to initiate. A fresh user may not be able to get into the system, unless he is initiated into the system by someone else. With the induction of computerized systems, the need for external assistance to users has increased. Each system is unique in one way or the other. To negotiate with a system a user needs lot of patience and practice, apart from guidance.

Lack of awareness: with increase in bibliographic control, there is an increase in the number and variety of information services. Many of the users are not aware as to what services are available and which service can provide him the needed information. To quote Kabesh again, “Science itself and the system for disseminating scientific knowledge having taken on a mass scale attained the status of an industry; but the attitude of scientists to use of scientific information often reflects earlier stages of the development of science when the seeking and initial processing of information was not an organized social activity but the personal business of every scientist”.

Structured user education programmers are needed to solve the two problems of system’s complications and lack

of awareness of the users about systems and services.

Under qualified staff: when we say that users need education in the use and exploitation of new systems and services, the library staff who has to educate the users must be qualified and competent enough for this job. Under-qualified staff will be more of a hindrance, than a help. Qualified and competent staff should be recruited. Existing staff should be properly trained, so that, they can help the users in a better way.

Lack of proper organizational structure: proper organizational structure, with a hierarchy of personnel; properly inventoried jobs for each and every person in the hierarchy; through monitoring and control; advance planning and policy making; proper management and timely decision making keeps a system function smoothly. Bad organization with prevent smooth flow of information.

Lack of bibliographic control: there is no proper bibliographic control of gray literature in many of the countries. In the absence of secondary sources, it becomes difficult to have access to literature of this kind.

Linguistic

Though languages were ostensibly created to facilitate communication, quite often they become the major hindrance to the communication of scientific and technical information. Each linguistic community virtually forms as island by itself, in which only a few scientists can communicate with more than one or two other linguistic groups.

Initially scientists thought that it will be sufficient for them, if they could master a few important foreign languages, learning foreign languages formed part of education in science and technology. It worked well for some time. But, acceleration of research in hitherto regarded as minor linguistic groups, and library and information profession coming forward with organized translation profession services and bibliographic control of technical translations at various levels, changed the situation completely.

National and international documentation centers started maintaining permanent translators for all major languages. Panels of translators are being maintained by all documentation centers. Special training programmers are being organized for scientific and technical translators. Associations of professional translators are being formed in different countries. Apart from government sponsored agencies, commercial translation services have come up.

An exclusive translation center at international and national level is a recent phenomenon. The European translation centre, 101 Deolenstraat, Delft, the Netherlands is an example of international translation centers, which is concentrating on east European scientific and technical literature. Russian science information centre at INSDOC supplies on demand English abstracts of Russian literature received in the centre. It also provides Russian translations.

Jargon: Even with a known language, there are problems associated with jargon, such as, neologism (=coining or using of new words); synonyms (= two or more words of the same language, with the same meaning but often with different implications and association); acronyms (= word formed from the initial letters of a name, e.g. NASA); etc.

Psychological and Social

Psychological: there are a number of psychological complexities of users which prevent them from getting proper information. These are:

- Weariness and reluctance to cooperate with information specialists;

- Unwillingness to changes;
- Unhappiness over discipline and procedure;
- Question of prestige;
- Shyness;
- Self consciousness and selfishness;
- Ignorance;
- Tradition boundedness; and
- Mistrust.

Social: differences with regard to philosophical, social and cultural concerns stem largely from differences in ideologies as well as in legal principles- that is, the right to freedom of opinion and information.

Administrative and Political

Certain societies are ‘close’ societies. They allow very little information to cross their borders. In the same way, they allow very little information to flow-in. in the same way, certain institution. Further relationship between government to government, institutions to institution also regulates the communication of information.

Procedural problems: not only policy but also, procedures involved in acquiring and communicating information controls the information transfer. Many a time, procedures involved are so much disgusting, the user may give up the hunt for information in the midway of his pursuit.

For Information Specialist

Mistrust of users, their ignorance and indifference, inflexible procedures, etc., prevent the information specialist from helping the users. These are surmountable by an open minded attitude on both sides.

Ways for Minimizing Difficulties of Information Users

Ms Pauline Atherton had identified some of the general features of information and the resultant problems of users; and suggested a set of suitable measures which will help to overcome the problems. These are given below.

Functions of some information services in minimizing difficulties of information users

Table 1

Features of the World of Information	User’s Difficulties	Information Service/ System capability
Generators and users of Information are usually Located a distance apart	Awareness of information generated difficult	Current awareness, service extension service, publications and publicity
Cumulation of information into vast quantities	Overabundance need for selection	Indexing, classification and storage systems, reference services
Accelerated growth of information. Increasing rate of obsolescence	Obtaining information quickly for specific problem	Reviews, state-of-the art and trend reports, digests, information analysis and

	area	evaluation
Interdisciplinary nature of information Scatter	Can specialize only in a restricted subject field	Indexing techniques to interlink subjects. Information analysis and enquiry service
Multiplicity of languages	Can be familiar with only one or a few languages	Translation service
Wide range of standards and modes of presentation of ideas	Only some standards and patterns are convenient to some users	Selection and presentation or repackaging according to user's needs
Wide variation in quality and reliability	Difficulties and inadequacy of time for evaluating and selecting	Information and data analysis analysis and evaluation
Delays in final stage of document provision	Difficulty in obtaining copies of required documents	Obtaining copies of documents; reprographic facilities

To Overcome the Barriers

Access to information is vital for the development of an individual, organization or even a nation. Organizations should involve people at various levels in gathering, processing and utilization of information for the benefit of the organization.

Research and academic institutions should allocate reasonable amount of money for library and information units so that they can come out with suitable information program.

The national governments have a greater role to play in building up infrastructures for information storage and dissemination. They have to evolve sound national policies for information services; help establish standards for information processing and organization; relieve information exchange controls; liberalize foreign exchange for importing information products; and reduce mailing tariffs.

They should also establish national information systems in various disciplines for bibliographic control, storage and dissemination. Agreements with other international organizations for exchange of scientific and technical information; creation of inter- government organizations for information exchange, training of manpower, establishment and management of information units will contribute to free and fast flow of information. It is rightly said that "a nation that reads is the nation that leads."

REFERENCES

1. Atherton, P.A Handbook for information systems and services. Paris: UNESCO, [1977].
2. Ayer, A.J. What is Communication (in Ayer, A.J. and others. Studies in communication. London: Martin Secker & Warburg, [1955], p. 11-28.
3. Bat- Hillel, Y. Language and information. London: Addison-Wesley and Jerusalem Academic Press, [1964].
4. Evans, B.I. Introduction (in Ayer, A.J. and other. Studies in communication. London: Martin Secker & Warburg, [1955]. P. 1-9.
5. Hanson, C.W. Introduction to science information work. London: ASLIB, [1971].

6. Lancaster, F.W. Towards paperless information systems. New York: Academic Press, [1978], p. 51-64.
7. Vickery, B.C. Information system. London: Butterworths, [1973], p.9-13.
8. White, M.D. communications behavior of academic economists. Ph.D. dissertation. University of Illinois, Graduate school of Library Science, [1971]

