
UNIT 5 INFORMATION ANALYSIS

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5.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain the concept of information analysis;
- discuss that the concept also implies the process of synthesis which is essentially a process of condensation of analysed information;
- describe the processes involved in information analysis and synthesis;
- highlight the activities of information analysis centres; and
- identify some of the R&D centres in India and abroad, where information analysis functions are undertaken.

5.1 INTRODUCTION

Twentieth century witnessed industrial revolution and tremendous increase in research and development (R&D) activities in the area of science and technology (S&T). Increase in R&D activities resulted in the exponential growth of publications. The research results were being published in a wide range of publications such as primary periodicals, research reports, conference proceedings, theses, dissertations, patents, etc. Researchers, due to sheer amount of information scattered over wide range of sources, found it difficult to keep track of published knowledge in their respective field of research. To solve these problems libraries, particularly scientific and technical libraries and information

centres attached to R&D organisations, started collecting and organising the latest published knowledge in their field of specialisation and bringing it to the notice of the users on regular basis using various information services. These services, which special libraries and information centres provided, could be broadly grouped into two levels of services. At the basic level, information centres disseminated information about material acquired by them, answered reference queries and provided current awareness service from latest journals to keep users informed of the current developments in a particular discipline. At the next level, special libraries and information centres offered complex literature searches in specific subject fields and also carried out retrospective searches and provided bibliographies, CAS and SDI services to individuals or group of users based on the user's profile. These information centres also indexed, abstracted and extracted information to disseminate it to users in response to the requests as well as in anticipation.

It was also realised that the services provided by special libraries and information centres were not sufficient particularly in newly emerging and specialised disciplines. Secondly, the services provided by information centres were mainly based on published sources and did not cover information which was not yet published and proprietary information. In other words, these services were not providing total state-of-knowledge in any particular subject area. The need was felt for different services which would compensate for that information which was not readily available in published sources. In addition, the need was also felt for information to be packaged in suitable formats which could be used immediately for carrying out research or for solving any problem in front line areas of research. This requirement led to the development of 'Information Analysis Centres' and 'Data Centres' in highly specialised subject fields. These information centres provided highly specialised services or so called value-added services which involved analysis, synthesis and evaluation of information for the users. This evaluated information was condensed, consolidated and repackaged in appropriate form for a well defined user group. In this Unit, you will study in detail the need, functions and products of information analysis centres.

5.2 NEED FOR INFORMATION ANALYSIS AND SYNTHESIS

As you are aware, after World War II, there was a tremendous increase in R&D activities in the areas of S&T. This resulted in corresponding increase in science and technology publications. Too much of information was being generated on a topic that it led to information overload and information explosion resulted in proliferation of information sources. Many of these sources were either redundant and/or of uneven quality and some were of questionable quality. Soon, it was realised that the indexing and abstracting services provided by information centres were no longer sufficient to meet the growing needs of the researchers, particularly in the areas of science and technology. Information explosion can be seen by taking an example of discipline 'chemical sciences'. The international abstracting periodical 'Chemical Abstracts', started its publication in 1907 it took 67 years (i.e. in 1974) to publish its first millionth abstract. By 1970s, the research output increased so much that 'Chemical Abstracts' was publishing one million abstracts in a period of less than two years. The researchers had to spend lots of time and

effort to retrieve the required information, even from this highly condensed device. Moreover, in indexing and abstracting services, each document covered, stands separate, disjointed from other documents, except it is placed along with other similar items, through subject grouping or by some system of classification. These publications do not provide a coherent picture of the overall development or current status of a particular subject. Thus, researchers needed a value-added reliable service, such as critical analysis of the state-of-knowledge in a given subject or its sub-discipline, which they could use immediately in their area of research with certain degree of confidence, without wasting much time and effort. Apart from researchers, the decision makers, at all levels, also faced lack of appropriate information which they could comprehend, assimilate and use with some amount of confidence at their own level and within the framework of their own circumstances. The inference is that while on the one hand there was overflow of information, on the other hand, it was not being properly organised, evaluated, packaged and presented in a form and format tailored for different categories of users such as researchers or managers. In other words, the users needed a value-added reliable service, which involved analysis, synthesis and evaluation of information pertaining to clearly defined specialised field or pertaining to specific mission, packaged in appropriate form for different categories of users. Thus, the need for information analysis was felt mainly due to three reasons viz., i) overflow of information; ii) scattering of information; and iii) uneven quality of information which required considerable amount of sifting and filtering to retrieve quality information.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Explain the need for information analysis and synthesis.

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5.3 INFORMATION ANALYSIS CENTRES

The above mentioned requirements led to the setting up of information analysis centres. In United States information analysis centres were created to overcome three major problems in scientific and technical information transfer namely:

- i) Variety of ways in which information was originated, such as through primary journals, secondary journals, letters, trip reports, technical reports, person-to-person, conference proceedings, through long distance communication, etc. and this information was available in different time lapses;
- ii) Scientists and engineers did not have enough time to sift through this mass of information to select essential information to address their emerging requirements. They preferred to create new data or information from the

laboratory rather than submitting themselves to the drudgery of ploughing through the plethora of stored information; and

- iii) Management's critical need to know what the state-of-the-art is at any given time for particular subject area.

The information analysis centres in United States came up in the areas where there was

- i) considerable research and development activity;
- ii) large amount of information being generated; and
- iii) urgent need for technological progress to be made.

By 1970s, about 200 information analysis centres came up in United States, of which about 170 centres were sponsored by U.S. Federal Government in areas of defence sciences, atomic energy, health, agriculture and education. Private sector also created information analysis centres, some to serve only a particular company and others to serve groups.

5.3.1 Difference between a Library, Information Centre and Information Analysis Centre

In order to know, the difference between information analysis centre and other information services, which are available through libraries and information centres, let us look at the working definitions of library, information centre and information analysis centre. The definitions are as follows:

Library: A library is a collection of books and similar material organised and administered for reading, reference and study.

Information Centre: An organisation which selects, acquires stores and retrieves specific information in response to requests; announces, abstracts, extracts and indexes information; and disseminates information from documents in response to requests or in anticipation.

Information Analysis Centre (IAC): An organisation directed towards the collection of technical information and data in a specific area and its evaluation and filtering into a form of condensed data, summaries and state-of-the-art reports.

The basic process involved in indexing, abstracting and extracting of information is '**analysis of information**'. In indexing activities, it is '**subject analysis**', in abstracting and extracting services it is '**content analysis**'. Here, no critical evaluation is carried out in the basic contents of the documents. The resultant product is factual, non-critical, or/and non-evaluative. In information analysis centre, the emphasis is on '**evaluation**' of the contents. Information analysis centres gather everything known about a clearly defined subject field, comprising of published as well as unpublished information. They analyse and evaluate this information, condense and repackage it in a appropriate form for a well defined user group and disseminate to that user group. Information analysis centres not only utilise published literature but also include trip reports, telephone calls, informal communications in the form of letters and face-to-face contact with experts, etc.

Compression and analysis are done by experts whose main objectives are to determine the recent developments in a particular field. This is the basic concept behind an information analysis centre. IAC is an organisation of one or more scientists, engineers and information specialists, committed at least on part time basis to provide a specialised audience the intellectual services of acquiring, evaluating, integrating, condensing and analysing available information or data pertaining to a specific mission. The centre provides answers to technical questions to its specialised audience with authoritative and timely data arrays, analyses, monographs and state-of-the-art reports, etc.

Information Analysis Centres can be identified by the following attributes:

- They are oriented towards a body of information in a clearly defined and specialised subject or mission. They have limited appeal and audience.
- Their primary purpose is to select, evaluate, analyse and synthesise information from the literature as well as from informal sources.
- They serve a defined clientele, with specific information needs stemming from the problems they are working on. The specific focus of their clientele changes often.
- They are more often staffed by subject specialists, which is usually hard to get.
- They are expensive and not easy to manage.
- They produce different products and employ different dissemination methods.

5.4 INFORMATION ANALYSIS AND SYNTHESIS: DEFINITION

“Information Analysis is *a process of determining and isolating the most salient information* conveyed by a given information source and separating this information source into its constituent elements on the basis of predetermined evaluative criteria”.

During analysis, the contents of selected source(s) are studied to identify salient information conveyed by the source(s). Then the relevant information is extracted, assessed and verified. Finally the extracted information is organised and sorted into headings and sub-headings according to some pre defined scheme.

On the other hand, “Synthesis is a process of *condensation and distillation of analysed information* from one or more sources and presentation of information in a *new arrangement or structure* with an *interpretative or evaluative point of view*”.

During synthesis the analysed information from many sources is merged and arranged. Here information is condensed and presented in a new arrangement with an interpretive or evaluative point of view.

5.5 PROCESSES IN ANALYSIS AND SYNTHESIS

Information analysis and synthesis activities are not new. Their origins can be traced back to 18th and 19th centuries. However, their systematic development and organisation is a latter phenomena caused by information explosion in science

and technology and the need for evaluative, critical information experienced by research workers, decision makers and problem solving research projects or missions. Certain basic operations need be performed before the actual work of information analysis is initiated. These **preliminary operations** constitute the following:

- Study of the subject area or mission in which the information will be analysed.
- Study of the potential user and uses for which the analysis will be done.
- Organisation and systemisation of the contents or characteristics of the subject or mission, i.e. a prior creation of a table-of-contents, classification, typology, or analysis and synthesis.
- Consideration of objectives, resources and constraints of the system or work within which analysis and synthesis is performed.
- Determination of evaluation criteria for use as the base for analysis and synthesis.

Without proper and specific guidelines on the above mentioned five areas no meaningful and rational analysis and synthesis can be performed. After establishing the proper guidelines, the next step is selection of material for information analysis and synthesis.

5.5.1 Selection of Information Sources

Selection is an important component of building information sources for information analysis centre and it needs proper attention. Selection of information sources involves three important elements. They are: 1) Selection policy, 2) Selection aids, and 3) Selection process.

- 1) Selection policy is a set of criteria and principles adopted and used by an information analysis centre for decisions on acceptance and rejection of information sources.
- 2) Selection aids are the tools employed in selection, evaluation and verification of the sources.
- 3) Selection process involves the people, methods and procedures used in arriving at decision.

It may be emphasised here that the selection policy must focus on user needs, statement about subjects, problem areas or missions to be covered. There should be a clear understanding of the information sources to be acquired and the criteria for their evaluation. Selection process is a judgement. It is a series of events which result in a decision either acceptance or rejection of given materials for information analysis and synthesis. Therefore, it must be accomplished by information specialists or experts in given subjects and / or a committee involving specialists, experts and users. This ensures better results. Of course, there are varieties of tools which can aid the selection process. For instance, one of the important sources is *Collection Development* by W. A. Katz. Several bibliographies exist on specialised subjects which may be used for the purpose.

After the preliminary operations mentioned above are completed, the actual work relating to information analysis and synthesis is initiated.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

2) What are the pre-requisites for organising evaluative and critical information services like information analysis and synthesis?

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5.5.2 Steps in Analysis and Synthesis

On completion of the preliminary operations, the analysis proceeds on the following lines:

- The first step happens to be *familiarisation* with the *total contents* of a *given document* or *set of documents acquired by the centre*.
- The contents acquired are *sorted* or *categorised* on the basis of subject contents of documents on a tentative manner using evaluative criteria, tools like classification schemes such as DDC, UDC, thesaurus or subject headings lists, such as LCSH, MESH, SHE, etc. can be used for sorting purpose (first evaluation).
- The third step is *selection* and *extraction* of the *most pertinent* or *salient features*, *filtering out of not needed information* and reduction of materials.
- *Verification* of the contents or data in *individual extracts* (second evaluation) is the main objective of this step.
- *Sorting of extracted information* into *classes* and *sub-classes* (*headings* and *sub-headings*) according to the *table-of-contents*, *classification scheme* or *typology* for the *specialised subject* or *mission*.

The next part i.e. the synthesis consists of the following steps:

- Comparative arrangement and merging of extracted information within each class and sub-class.
- Comparative evaluation of different extracts or data in each class or sub-class (third evaluation).
- Resolution of conflict (if any) or decision to present conflicting information in synthesis.
- Compression of the information into a structure and form suited to intended users and uses and in accordance to objectives, resources and constraints of the system or centre as a whole.
- The evaluation of the final product according to criteria related to users and use (fourth evaluation).

Let us explain the processes of analysis and synthesis by taking an example from an IAC product such as ‘critical review of a subject’. For the preparation of a critical review, all the research articles published on that discipline during a specified period say for the last one year are collected and studied by the experts in that field. Only those articles which have made some significant contributions towards the progress of the discipline are selected and others are rejected. During **analysis** all the selected sources are studied and their salient features are extracted, assessed and verified. The extracted information is then organised and arranged under specified headings and sub-headings according to some predefined scheme. During **synthesis** this extracted information from all the selected sources is condensed, merged and put under proper perspective. The resultant product is a ‘**Review Article**’ providing a narrative account of progress of the discipline during that period. In critical reviews the experts, apart from providing an overview of the state-of-the knowledge of the subject, also point out the lacunae in the research areas and suggest new areas of research that are needed to be probed.

As can be observed, the evaluation, analysis and synthesis is a four stage process comprising:

- 1) Evaluation of information sources (documents),
- 2) Verification of individual extracts or data from each document,
- 3) Comparative evaluation of different extracts or data in each class and sub-class, and
- 4) Evaluation of synthesised product or products.

It must be noted that the criteria used for evaluation in each of these four stages are different though related. All these operations require suitably qualified specialists with adequate experience and intimate knowledge of the clientele for whom the service is being provided by the IAC centre. Generally, information analysis requires considerable subject expertise on the part of the analyst. It also opens the way to new knowledge by identifying gaps in the knowledge. This leads to new areas of research and thereby new discoveries.

It has been observed that as the complexity, interdisciplinary, and technical sophistication of available information increases, less of it can be used even by decision makers and problem solvers in its original form. This certainly points to the need for analysed, value-added and evaluated information. Information analysis service is one of the value-added services. The processes by which value is added to such services are as follows:

- Selection of information from diverse sources;
- Analysis and evaluation of information;
- Extraction of relevant information keeping target users in mind;
- Integration of extracted information from many sources; and
- Presentation of information in new arrangement and form that is most suitable for the target user.

Taylor (1986) examines the work of information analysis centres in terms of his 'user-driven value-model' and concludes that their main value-added processes are those which are involved in the assessment of *quality* (accuracy, validity, etc.) as well as with the *analysis* (evaluating, comparing and correlating, filtering, synthesising and interpreting) of information. In this connection he specially describes and analyses the work of the Purdue University IAC. Another example cited is the work of Cambridge Crystallographic Data Centre.

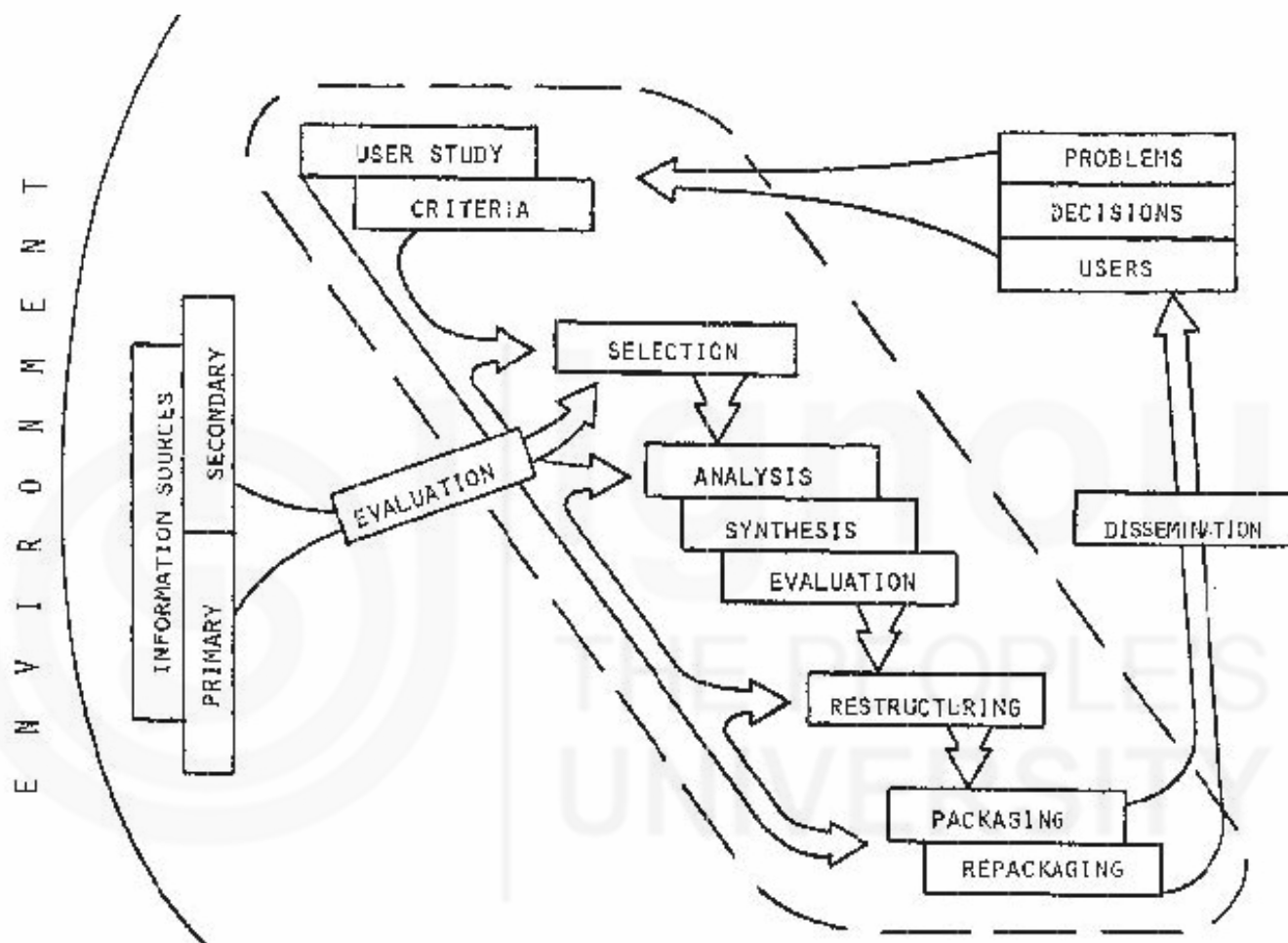


Diagram 5.1: Processes in Information Consolidation

(Source: Saracevic and Wood, Page 31.)

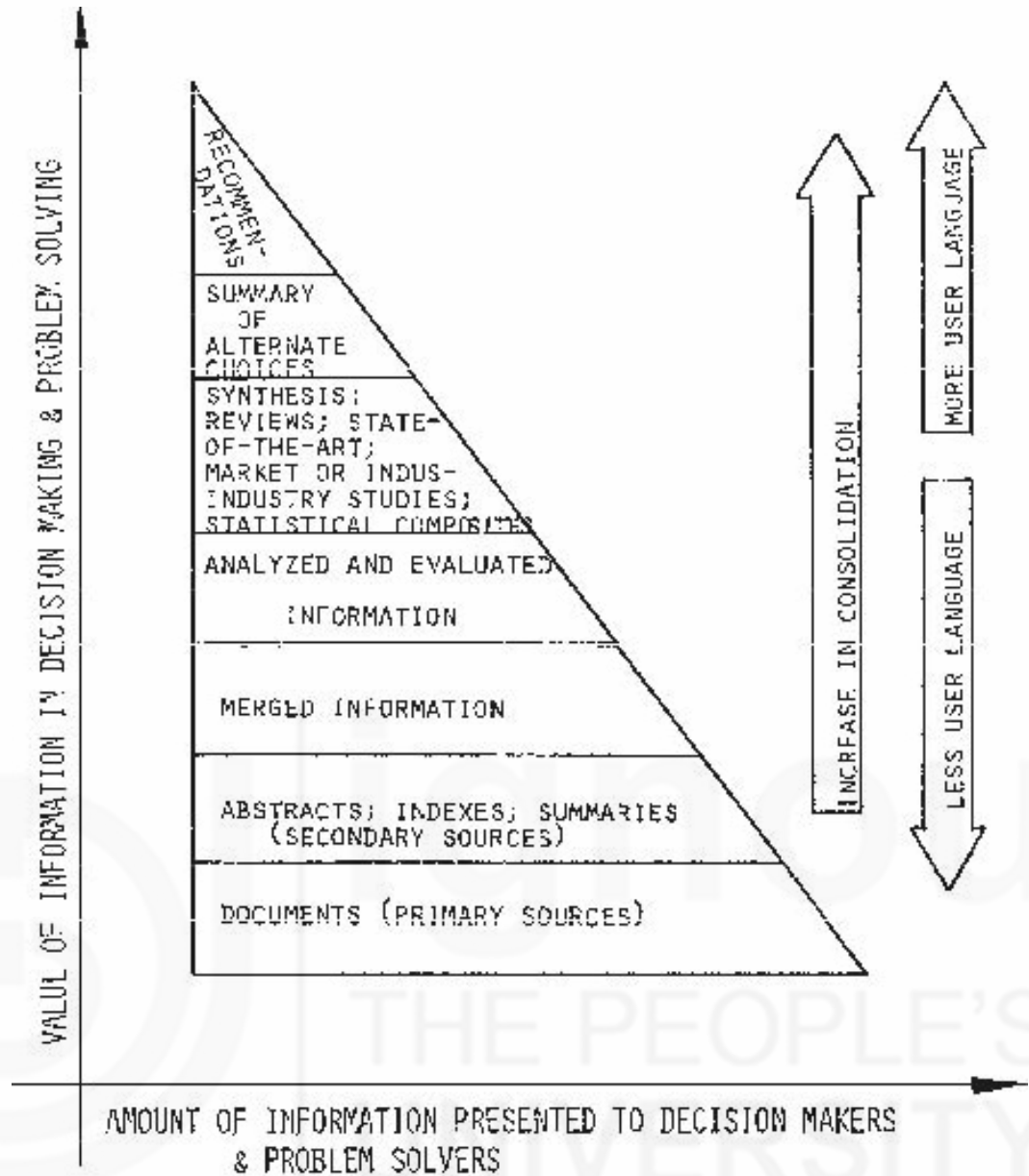


Diagram 5.2: Value of Information in Decision Making and Problem Solving
(Source: Saracevic and Wood, Page 51.)

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) Briefly describe the significant steps involved in the organisation of information analysis as a value-added information service.

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5.5.3 Users and Uses

Users constitute the most important component of any information service or system. ‘*Know thy user*’ is the first commandment of information services, especially provided by information analysis centres. As a rule, information systems and services succeed only if they adjust to users and their needs. This adjustment is particularly essential in the case of information analysis and synthesis service. Hence, a thorough assessment of user needs is a pre-requisite for an evaluative critical service like information analysis.

Earlier, the services of information analysis centres were mainly meant: a) for the researchers engaged in problem solving projects or missions and b) for the management to provide them briefs on the state-of-the-art of that area or mission. However, soon it was realised that if the results of scientific and technical research are to reach the people at the grass root level for the benefit of the mankind, then this analysed information is required to be consolidated, restructured and repackaged for that user group also. Consolidation of information is a process of merging information from one or more sources and presenting in a new arrangement tailored to the requirement of either researchers, planners or policy makers, students, extension workers, farmers or even common man. It was observed that information consolidation activities can be performed within the framework of information analysis centres. You will study information analysis and consolidation activities in detail in Unit 6 of this Course.

5.5.4 Information-rich Environment

This phrase *information-rich environment* is intended to sum up the situation which all information analysis centres aspire to provide. Their users being surrounded by the information they need and can use, in an appropriate form, without in any sense being swamped by it. Such an environment is particularly stimulating for innovation and creativity on the part of the users belonging to the centre. This must be one of the ultimate goals of an information analysis centre.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) What do you understand by the expression “information-rich environment”?

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5.6 EXAMPLES OF INFORMATION ANALYSIS CENTRES

5.6.1 International

- 1) **Carbon Dioxide Information Analysis Centre (CDIAC):** It is the primary climate change data and information analysis centre of the U.S. Department of Energy. CDIAC data holdings include records of the atmospheric concentration of carbon dioxide and other radioactive gases; the role of the terrestrial biosphere and oceans in biochemical cycles of greenhouse gases; emission of carbon dioxide from fossil fuel consumption and land use changes; long term climate trends; and effect of elevated carbon dioxide on vegetation and vulnerability of coastal areas to the rising sea level. (<http://www.cdiac.ornl.gov/>)

CDIAC brings out the following information analysis products:

- *CDIAC Newsletter*
 - *Trends Online: A Compendium of Data on Global Change*
 - *A Handbook of Methods for Analysis of the Various Parameters of the Carbon Dioxide System in Sea Water*
 - *Comparison of Carbon System Parameters at Global Carbon Dioxide Survey from 30 Cross-over Locations in the North and South Pacific Ocean, 1990-1996.*
- 2) **DoD Information Analysis Centres:** United States Department of Defence (DoD) has the following ten information analysis centres, each dealing with specialised branch of S&T :
 - **AMMTIAC-** Advanced Materials Manufacturing and Testing Information Analysis Centre
 - **CBRNIAC-** Chemical, Biological, Radiological and Nuclear Defence Information Analysis Centre
 - **CPIAC-** Chemical Propulsion Information Analysis Center
 - **DACS-** Data and Analysis Centre for Software
 - **IATAC-** Information Assurance Technology Analysis Centre
 - **MSIAC-** Modelling and Simulation Information Analysis Centre
 - **RIAC-** Reliability Information Analysis Centre
 - **SENSIAC-** Military Sensing Information Analysis Centre
 - **SURVIAC-** Survivability/Vulnerability Information Analysis Centre
 - **WSTIAC-** Weapon System Technology Information Analysis Centre

Defence Technical Information Centre (DTIC) is the premier provider of the technical information to scientists and engineers of U.S. Department of Defence. Information Analysis Centres' programme of DoD deals with analysis, synthesis and dissemination of relevant, timely knowledge and information. Above mentioned 10 Information Analysis Centres provide tactical relevance through direct connection to the war fighter and strategic

value through long term trend analysis and recommendations. Products such as state-of-the-art reports provide a detailed analysis of immediate, critical challenges, while Technical Inquiry Services offer a direct connection to a network of Subject Matter Experts from across government, industry and academia.

Information Analysis Centres (IACs) meet the customers on ground, thereby maintaining involvement of technical community executives and working with senior executives to solve the challenges of the day while anticipating and preparing for those of tomorrow. Through the IACs the research data is collected, reused to answer recurring challenges and analysed to identify long term trends and provide recommendations to the acquisition community. The products of IACs include newsletters, digests, research updates, state-of-the-art reports, etc. (<http://www.dtic.mil/>)

5.6.2 National

During last three decades a number of different types of information institutions have come into existence in India to meet the information needs of different user groups. However, there is no national level information analysis centre operating in the country. Of course, this does not mean that information analysis and consolidation activities are not performed. Such activities are undertaken by some information centres as well as R&D institutions especially in the field of science and technology in the country. However, such activities are few and are limited to some specific subjects. Some examples are listed below:

- 1) **The Energy and Resources Institute (TERI):** Commonly known as TERI (Formerly Tata Energy Research Institute), the institute provides information analysis service in the field of energy mostly to its research staff. TERI publishes IAC products for the use of different levels of its user groups also. You will study about its products in Unit 6 of this Course. (<http://www.teriin.org/>)
- 2) **Centre for Monitoring Indian Economy (CMIE):** CMIE is a private organisation which provides information analysis services in different sectors of Economy. Its *Industry Analysis Service* and *Economy Intelligence Service* are cited as examples of information analysis services. (<http://www.cmie.com>)
- 3) **IDSА (Institute for Defence Studies and Analysis):** It “is a non-partisan autonomous body dedicated to objective research and policy relevant studies on all aspects of defence and security. Its mission is to promote national and international security through generation and dissemination of knowledge on defence and security related issues”. IDSА journals, monographs, briefs and books are principal medium through which policy recommendations are disseminated. IDSА publishes briefs and papers on significant national and international events to provide background as well as analysis and recommendations. These include *Policy Briefs*, *Issue Briefs*, and *Special Papers*, etc. It also brings out News Digests such as *Strategic Digests*, *POK News Digests*, *Chemical and Biological News Digests* and *Weekly Digests of Pakistan’s Urdu Press*. IDSА publishes comments, short and immediate analysis of recent national and international security developments. (<http://www.idsa.in/>)

Here, it may be mentioned that such activities have come up due to the interest and efforts of sponsoring agencies belonging to government, public and private sectors. No doubt, such activities are oriented towards the objectives of their parent bodies. Private organisations like 'Development Alternatives', 'Swaminathan Foundation' are also interested in the development of information analysis services as a support to their problem solving research projects.

5.7 SUMMARY

Information analysis and synthesis activities are not new. Their origins can be traced back to 18th and 19th centuries. However, their systematic development and organisation is a latter phenomena caused by information explosion in science and technology and the need for evaluative, critical information experienced by research workers, decision makers and problem solving research projects or missions. This type of service can only be performed by subject specialists trained in critical evaluation, consolidation and interpretation of scientific and technical information. The Unit briefly discusses the concept of information analysis and synthesis, its evolution, development and the specialised and other requirements necessary for undertaking such activity. The need for such a service and the basic processes associated with its organisation, are also described and explained in this Unit. Services of information analysis centres operating in India and abroad are described. It has been emphasised that the services of IACs are undertaken by subject specialists along with information specialists trained in the art of selection, critical evaluation, interpretation and consolidation of scientific and technical information.

5.8 ANSWERS TO SELF CHECK EXERCISES

- 1) The growth of information is increasing unabated in all subjects and specially in Science and Technology and is exponential in nature. Additionally it is interdisciplinary in nature and is scattered in many sources. This growth, combined with increasing rate of obsolescence; creates problems for users. One more aspect related with scientific information is that it is created by peers in the field for the use of peers. Therefore, many of the users and potential users are not in a position to use it for their requirements. Decision makers, at all levels, face lack of appropriate information which they can comprehend, assimilate and use with some amount of confidence on their own level and within the framework of their own circumstances. The inference is that, while on the one hand you have overflow of information, on the other hand, it is not being properly organised, evaluated, packaged and presented in a form and format tailored for the use of those who need it. To overcome this difficulty and to ensure fruitful use of information, the specialised services of information analysis and synthesis have become necessary.
- 2) The pre-requisites for organising evaluative and critical information services, such as information analysis may be summarised as follows:
 - Study of the subject area or mission in which the information analysis service will be undertaken;
 - Study of the potential user and uses for which the analysis will be done;

- Organisation and systemisation of the contents or characteristics of the subject or mission, i.e. a prior creation of a table-of-contents, classification, typology, or analysis and synthesis;
- Consideration of objectives, resources, and constraints of the system or work within which analysis and synthesis is performed; and
- Determination of evaluation criteria for use as the base for analysis and synthesis.

Proper guidelines are necessary to give meaningful information analysis service. It must be emphasised that selection and building of proper information sources, employing subject specialists with proper training in the preparation of evaluative information-added products are essential prerequisites.

- 3) Information analysis is an intellectual process by which value is added to information. This includes activities such as: selection, evaluation, validation, standardisation, summarisation and synthesis. Generally, these activities will require considerable subject expertise on the part of the analyst. The outcome will not only be that the information will be more reliable but more usable, because of the standardisation, summarisation and comparison. This information analysis process also opens the way to new knowledge through the synthesis of information and an appreciation of gaps in the knowledge. The process is an important contribution to the topics of information for innovation and information updating, assessment of quality and with evaluating, comparing, correlating and filtering. It is worth noting that information analysis process demands human expertise and therefore expensive to organise. The basic objectives of any value-added information service will be considered fulfilled only if the service enables the users to generate new ideas.
- 4) The phrase '*information-rich environment*' is intended to sum up the situation which all the information services should aspire to, i.e. their users being surrounded by the information they need and can use, in an appropriate and accessible form, without in any sense being swamped by it. Such an environment will be particularly stimulating for innovation and creativity on the part of its users. It is felt that information analysis, synthesis and consolidation gives rise to such an environment.

5.9 KEYWORDS

Analysis of Information : The process of determining and isolating most salient information conveyed by an information source and separating this information into its constituent elements on the basis of a predetermined evaluation and other criteria.

Consolidation of Information : The process of merging or integrating information from one or more sources and presenting it in a new form and format tailored to the requirements of a specific group of users.

- Evaluation of Information** : It is a process of assessing and ascertaining the intrinsic value and validity of information on the same topic extracted from a number of sources and resolution or reconciliation of conflicting aspects.
- Information Analysis Centre** : A formally structured organisational unit specifically established for the purposes of acquiring, selecting, storing, retrieving, evaluating and analysing a body of information in a clearly defined specialised field or pertaining to a specified mission with the intent of compiling, digesting, repackaging or otherwise organising and presenting pertinent information in a form most useful to a group of users.
- Value-added** : It is a term which is widely used in respect of information services to describe information services and their attributes. It is information having value to a specific user in a specific context.

5.10 REFERENCES AND FURTHER READING

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