Department of Distance Education

Punjabi University, Patiala

Class : Master of Library and Information Science

Semester : 2

Paper :   MLIS 206

(Information Analysis and Consolidation and Repackaging)

Medium : English   **Unit : II**

Lesson No.

2.1   Information Analysis and Consolidation Methodology

2.2   Knowledge and Skills required for Information Analysis and Consolidation

2.3   Planning and Management of Information Consolidation Units.

2.4   Content Creation and Content Management System

2.5   Methodology for Preparation of Handbooks, News Letters and State of the Art Reports

2.6   Abstracting : Types and Guidelines for Preparing Abstracts

2.7   Evaluation of Information Products : Criteria and Steps.

Department website : www.pbidde.org

Lesson No. 2.1   **Author : Dr. A. Amudhvalli**

INFORMATION ANALYSIS & CONSOLIDATION METHODOLOGY :
(Pre-requisites and stages/steps in Preparation of ICP)

Structure

9.0   Objectives

By studying this Unit you will be able to:

- define Information Analysis & Consolidation (IAC)
- list the varied types of IAC products
- explain the methodology of the IAC process
- describe each of the stages involved in preparing IAC products
- suggest appropriate IAC product for your library & information center.
- adopt the process of IAC for your library & information center.

9.1   Introduction

The primary purpose of today's library is to make available the information it holds to its users generally on their request. With the changing trends, the role and responsibilities of all the library & information centers have changed. Information Explosion, Scatter and Obsolescence factors have put pressure on libraries. The current phenomenon is "NOW or NEVER". No more libraries are interested in acquiring hard copies, but to be an efficient provider of information and promoter of access to information within its premises and elsewhere. So also the users' needs and expectations are so demanding that the tasks to be performed by our library & information professionals are challenging. The user community has grown quantitatively and

qualitatively. Their roles have been redefined and the skills and expertise are different from those of the earlier traditional roles. With the advent of Information Technology (IT) and its impact on library & information centers are such, the service desks have a whole lot and different set of offers to its customers to meet their information requirements. A cost-time-effective service is the order of the day. And also proactive programmes are more appreciated by the users of today's information environment with information overload and access problems. To accomplish this, today's information worker must equip him/herself with new techniques of Information management.

Hence the purpose of this lesson is to acquaint the students and guide them to plan and prepare IAC products. This lesson is structured to explain and describe the IAC process, its prerequisites, steps involved in the preparation of IAC products. In attempting to do that, it would be helpful to define and the terms and concept of IAC.

9.2   Information Analysis & Consolidation

9.2.1 Meaning & Concept

Information - There is no single definition of this. Different people have defined and used it differently. The synonyms of this term include idea, concept, data, assumption, proposition, experiences, news, message, decisions, text, knowledge, fact, truth, theory and wisdom.

Analysis - The term refers to 'examine, evaluate, ascertain, assess, find and observe the detailed constitution of an entity or a concept; It is an antonym of 'synthesis.'

Information Consolidation - It is a process of selection, analysis, synthesis and possibly restructure and repackage the existing public knowledge based on the specific information requirements of a definite clientele or user group, who otherwise may not be able to access or avail the benefit/s of the content of the original documents scattered around.

9.2.2 Need

The IAC process and products are warranted in the light of the chief features of today's information society. A few of them are highlighted and discussed for their impact on information systems and services.

- Information Explosion
- Scatter of Literature
- Obsolescence
- Information Technology
- Infrastructure
- Manpower
- Information Needs and Demands
- User Community
- Cost-Time-Space Effect
- Parent Institution

The above said features of the Information Society have created an information

gap between the information generation point (source) and its utilization point (user). This gap is characterized to create three 'As'- AWARENESS; AVAILABILITY; and ACCESSIBILITY. The impact is the gap is widening and it needs to be under control if not possible to be totally eliminated. The information transfer cycle has been redefined with an equal role and responsibility in producing and distributing both primary and secondary information such as that of IAC products. The quantity, quality, structure, content, cost, time and use pattern are all the factors to be examined in the light of the newly changing and emerging information, communication and technological (ICT) environment. Hence, the need and justification for planning and producing for IAC activities in libraries and information centres.

Information Explosion

The growth in the amount of scientific published information seems to be exponential leading to publication explosion. To quote De Solla Price, we have moved from 'Little Science' to 'Big Science'. The growth rate has been estimated to be doubling every 10 years. The recorded knowledge and literature seem to have a regular pattern of behaviour in its production and consumption. This is the root cause for all the following features under discussion. This calls for an expertise in information handling.

Scatter of Literature

Literature Scatter can be discussed in terms of subject, spatial and language scatter and as well for its variant physical forms. The interdisciplinary and multidisciplinary approaches, occurrences and interoperability in the scientific world are the, order of the day demanding more of consolidation. The geographical scatter, despite bibliographic control is very high in the instance of publication explosion leading unawareness and non-availability of desired information. Language though is a carrier of information can be also a barrier. It is estimated that only 60% of scientific data is in English and the rest relies on translation facility. Not always all are accessible to all the end users all times, which warrants repackaged information at one point for immediate usage.

Obsolescence

Information tends to get obsolete fast with the increasing growth rate of scientific knowledge and changing information needs and usage pattern of the user community. The reasons for the information being outdated are many. Of all of them, one relevant to support the current discussion is that though Information/ Content is valid may be labeled as 'outdated' due to its poor visibility. This means that if the 'right information is not made available to the right user at the right time' its validity and reliability is questioned. Misplaced and missed information is as good it is lost.

Information Technology

The most talked about theme and feature of today's information world is the entry of technology and its impact. ICT has pervaded into the libraries and information centres so much that it can be neither ignored nor overlooked. The information

professionals and consumers view it as both an angel and a devil. The technological innovations have largely affected the media or the physical carrier of information rather than the content itself. Technology has made it possible to repackage information both in terms of content and physical form to suit the users' preferences. ICT are viewed as enablers of free flow of information across barriers.

Infrastructure

Most of the developing countries like India suffer from lack of adequate infrastructure facilities to promote information services. In the absence of computer and communication systems within the libraries and information centres, a repackaged and readily consumable information products made available through marketed and/ or shared platforms are a boon for both the intermediary and end users.

Manpower

Trained and skilled information professionals to handle the complex and scattered information despite limitations are available these days to process and produce IAC products. Special papers and courses offered today equip the new entrants to be aware of the techniques of preparing tailor made information products to meet the different information requirements. A blend of theory and practice, hands on experiences, internships, in-house training, short term training programmes and workshops facilitate the professionals to adapt to the work situation with ease and ably. At the other end, those libraries & information centres lacking adequate and skilled professionals can avail the IAC products otherwise made available (outsourcing).

User Community

The consumers of IAC products are more of specialized and serious researchers, scientists, scholars, academicians policy makers, planners, and decision makers who need to depend on intermediaries and agents of information due to lack of time and convenience. Most of these users are those working in the academic, industrial and R&D sectors. This type of user community is increasing in size and their expectations from the information centres for reliable and time bound qualitative products.

Information Needs and Demands

The kinds of information sought by the above said users are more specific, scientific, technical/ know how, experimental, problem solving, procedural, project proposals and control, administrative, financial, manufacturing, marketing information for a given purpose. Hence, IAC products could only meet these wide range of information needs and demands of the select user group/ community.

Cost-Time-Space Effect

Information is no more freely available. Access to information resources is made fee-based. Information processing and handling are carried over by technically qualified intermediaries and agents that they carry price tags. It is as well time consuming. Looking at the effectiveness and costtime-benefits, IAC are more warranted and justified to be made available at the institutional level rather than being attempted by individual

users. With budget control and space problems, the concept of collection development has been redefined to promote to offer more of tailor made information products rather than acquisition and 'own a document' policy by the today's libraries & information centres. Hence both by the providers and ,onsumers IAC process and products are preferred.

Parent Institution

Obviously, most of the IACs whether discipline or mission oriented are generally part of a large parent organization. By and large such IACs are also found to be integral components of special libraries and documentation centres or commercial agencies. Further, the activities seem to be in conformity with the objectives of the respective parent bodies and its users, who have realized the relevance of IAC products and warrant for information consolidation activities. Hence, well organized IAC units are the need of such parent organizations.

Recognizing the need for IAC process and products in the light of the features discussed above, IAC activities are undertaken.

9.2.3 Purpose

The major objectives of IAC units include to:

- inform the users with better alternatives and consequences of IAC
- increase the level of awareness, availability & accessibility of information resources
- enhance the knowledge competence and skills
- improve the adaptability & responses of the producers & consumers
- meet the expectations & requirements of the information user/s
- enrich the information products quantitatively and qualitatively
- raise the level of effectiveness of services
- contribute towards the merit and success of individual & user groups and intermediaries
- save the time and cost of both the intermediaries and end -users
- harness the potentials of ICT
- overcome the lack of infrastructure facilities
- bridge the divide between the 'information rich and poor'.

9.3   IAC Products

IAC products are the outputs of IAC process and performance. There are a wide range of IAC products made available either as hoard or soft copies as the users' requirement may be. These may be free or fee-based, depending on the type of their producers & consumers. They include:

1. Handbooks/ Guidebooks
2. Manuals/ Do-it-yourself Booklets/ Pamphlets
3. Process /Product Profiles
4. Reports (Feasibility, Evaluation, Project, Statistical, Research, Status/

State-of-the art, Trend & Forecast)
5.   Reviews & Critiques
6.   Newsletters & House journals
7.   Subject Bibliographies/ Indexes & Abstracts
8.   Translations
9.   CAS & SDI Products
10.   Flow charts/ Plans/Timetable
11.   Project Proposals
12.   Data Compilations/ Summaries
13.   Announcements/ Bulletins
14.   Promotional Materials
15.   Conduct & organize workshops/ seminars
16.   Briefings/ Talks/ Data in capsule/ Compiled data
17.   Demonstrations/ Presentations/ Graphic Displays
18.   Documentary Films
19.   Instructive & Training Materials
20.   Audio/ Video/ Press Clippings
21.   Case Studies
22.   Directories

9.4   Methodology

Information professionals though trained and equipped in the art and craft of planning and preparing IAC products, expertise in subject, familiarity with IT tools & techniques and skills in profession and communication are essential qualities for undertaking the process of IAC activities. The methodology for planning and preparing IAC products are two-fold. One is the prerequisite and the other is the stages and steps involved in IAC process. Both these are discussed in detail subsequently.

9.4.1 Prerequisites

The prerequisites for an effective and efficient IAC process are as follows:
1.   Subject knowledge
2.   Linguistic proficiency
3.   Understanding of the target group
4.   Awareness of information resources
5.   Familiarity in IT tools & techniques
6.   Skills & styles in data handling
7.   Time & Cost/budget
8.   Professional ethics

Each of these prerequisites is to be considered for its merits for a successful IAC process. Hence, each is elaborated for better understanding of the students. It should be borne in mind at this juncture that generally IAC products are the results of teamwork rather than by an individuals. It comprises of information & communication

professionals supported by the peer & production groups, subject, language and technical experts at different stages of the IAC process. Secondly, some of the IAC products turn out to be the by-products from other major information services.

9.4.1.1 Subject Knowledge

IAC products are all subject focused meant for specific user group. Hence, one who handles the data to produce IAC products ought to have adequate knowledge o the content of the document under process. A depth and comprehensive perspective of the subject of the producer results in a reliable IAC product. In such cases, the subject is not familiar consultancy with the subjects specialists are to be sought for clarity and understanding. Interdisciplinary & multidisciplinary nature of subject growths has posed difficulties requiring consolidation activities. Scatter of subject knowledge seem to affect the user groups in locating relevant data with no loss of time and requisite information for the progress of their research work.

9.4.1.2 Linguistic Proficiency

Language command is an essential quality expected of an IAC producer. A good linguistic proficiency enables an effective analysis, free flow and expression of thought content. The source document if not in the carrier language (Generally English) has to be undertaken for the responsibility of translation if it is a significant resources to be included ad an input for the desired IAC product. Language is a barrier for most of the scientists and researchers in the field. IAC process can solve this problem.

9.4.1.3. Understanding of the Target Group

In developing countries, very little attention has been given to the information users and their needs. They and their needs are unique and are different and diverse in nature. The users are so complex in their attitude towards library and the information professionals, that their psychology, background, type of work currently engaged, their requirements, information search & behaviour pattern are to by observed and ascertained carefully prior to the dissemination of information. It has been universally acclaimed that user opinion & survey- individual and or group are an essential prerequisite to offer proactive service particularly.

9.4.1.4. Awareness of Information Resources

The professionals engaged in IAC activities ought to be familiar and well aware of the abundant and variety of information resources. Exploration, elaboration, duplication, overlap, scatter, obsolescence fragmentation, irrelevant & noise cause more problems for producers of IAC as the end users depend and rely on them with great expectations to handle the complex information environment. The kind and level of demand for information resources differ. Higher the role and responsibility of decision making and seeking solutions to problems, greater is the need for the IAC products. Hence, adequate knowledge and skill to choose the right resource for the right problem at the right time is an IAC prerequisite.

9.4.1.5 Familiarity in IT Tools & Techniques

The kinds of IT tools and advancement of technology has a great impact on libraries & information centres, especially with reference to handling of data and information resources. The nature and user demand of IAC products are such that application of IT is inevitable. It has become mandatory rather than optional for the ICP producers to be equipped with the skills in handling both hardware and software to compete with the computer professionals undertaking IAC process.

9.4.1.6 Skills & Style in Data Handling

IAC products are repackaged in both content and form. Each of them has its own format and style of being consolidated and presented to suit the target group for whom it is tailormade. The products, be it in hard copy or soft version has to be planned and prepared to fit into the frame of desired form which gives the value added to the service. The final product has to be clear, simple, precise and focused with he key elements and components of the subject analyzed, processed and condensed. The style of presentation varies from one to the other of the IAC product. Hence, at the preparatory stage itself care ought to be taken accordingly.

9.4.1.7 Time & Cost

Most of the IAC products are on demand' service category. A few are there under proactive service category also. The quantum and quality of work involved with IAC activities are such, that they are time consuming and costly. The resources - men, money, material and data input into IAC processing are so selective and specific that it involves time and cost. Keeping in view of the time cost- effectiveness of this programme, those involved ought to be conscious of the time and cost and make it relevant and timely. With IT and its high features, library & information management can be well structured and programmed aimed towards Total Quality Management.

9.4.1.8 Professional Ethics

Commitment, sincerity, scientific, rationale, systematic, adaptability to work situations, understanding the complex user/s, efforts, leadership, team spirit, patience, smartness, interest to learn and know more in the given problem area/s, alertness, fast and quick to grasp ideas, willingness to share and draw relevant resources from within and elsewhere available, cautiousness of time and cost are expected that of the professionals engaged in the IAC activities. Technical skills plus these qualities can be reflected on the IAC products. Lack of professional ethics cannot help an IAC process to be effective. Absence of these qualities and qualifications amongst the library & information professionals lead to threats from 'the others' in the associated fields.

A clear vision to plan, draw flow chart, and prepare mentally and physically to design and develop the required IAC product/s in a given library & information center has to be envisaged by those involved in it. justification of the task is mandatory in producing an IAC product. To sum up, it can be said that all the above-elaborated features are the prerequisites to accomplish the task of IAC programme.

9.4.2 Stages/Steps

      IAC process involves three levels of work - Idea, Verbal & Notational Planes. The kind of tasks involved in each of these 3 planes is explained below:.

      The works in the Idea Plane are:

1.   **Initiation of step -** Recognizing user/s needs and demands for an IAC product and planning and commencing the work. This step involves identification and formation of a team of specialists and information professionals who would facilitate the ICA process. The design/flow chart of the IAC process is drawn to commence the work.

2.   **Scope determination -** The scope & coverage of each of the IAC product will vary and also be as per the specification of the user/s demand. At this step the focus of the chosen subject and its facets, the type and level of IAC product/s are decided.

3.   **Data collection -** Based on the decisions determined at the steps 1 & 2 identification and selection of right information sources, followed by scanning for the relevant content and compilation of the required raw data for the preparation of IAC products are undertaken.

4.   **Data appraisal -** The collected data need to be organized, analyzed for its content, assessed for its merit and purpose of the user/s requirement, synthesized and consolidated. The appraisal leads to the preparation of IAC products in terms of its synthesis & consolidation.

The works in the Verbal Plane are:

1.   **Data drafting -** After evaluation the IAC product has to be formatted. A new data flow in a helpful sequence, if need be reviewed, interpreted and up-to-date data ought to be prepared. The presentation of data has to follow principles of unity of ideas, sequence, simplicity, transparency, consistency and clarity. Repletion, redundancy/ tautology, noise, complexity, jargons, abstractness have to be avoided.

5.   **Data/Content Checking - Finalization -** The draft document or IAC product has to be tested for its features, correctness and need be edited, checked and cleared for errors, if any. After the final proof reading of the finished IAC product the finalization can be achieved.

The task involved in the Notational Plane is:

1.   **Use of Numbering System -**As part of data organization, the structural elements of a text has to be marked with an acceptable numbering system. This is very helpful especially in the case of IAC products, which are tailor-made and repackaged to facilitate the consumers to use the product at ease and quickness. The unity of ideas/ flow of data can be arranged hierarchically proceeding from general to special using either Roman capitals and/or Indo-Arabic numerals, as the case may be. Adoption of numbering system ensures clarity for both the producer & consumer. Numbering system indicates

a logical organization of data drafted

9.5. Summary

In this Unit, the concept of IAC, its purpose, prerequisites, process and products has been discussed. This Unit also explains the methods to be adopted in producing several of the IAC products. It is a process of selection, analysis, and synthesis and possibly restructures and repackages the existing public knowledge based on the specific information requirements of a definite clientele or user group. IAC process warrants a set of prerequisites involving resources, principles and guidelines, plan and design, budget, time, subject and information professional expertise and a clear knowledge of the target audience and the purpose in hand. IAC activities involves three levels of work - Idea, Verbal & Notational Planes. The kind of tasks involved in each of these three planes is explained. IAC process should facilitate a feed back loop enabling the target audience to gather the helpfulness and satisfaction, as it means time and cost in producing each of the IAC products.

9.6. Key words

Information Analysis - In the context of information handling, it refers to examining and evaluating a document for its length, breadth, depth of its content and its relevance to derive and extract to synthesize for the purpose of consolidation.

Consolidation - The term refers to 'compose or combine or build together separate elements especially of conceptions or propositions or facts into a connected whole, a theory or system'.

Information Repackaging - Information analyzed ought to be synthesized and presented in form. The form includes both physical and inner forms of the document. The content is interpreted, restructured and tailored to suit the specific demands of a specific user/s and also made available in a new physical form or medium preferred by the target group.

IAC Products - IAC products are the outputs of IAC process and performance. There are a wide range of IAC products made available either as hoard or soft copies as the users' requirement may be. These may be free or fee-based, depending on the type of their producers & consumer.

9.7. Model Q &A

(1)   Define Information Analysis & Consolidation.

IAC involves selecting, analyzing, assessing, synthesizing, consolidating and repackaging information with a view of saving time and cost and to deliver the products in a convenient and effective form to a target audience with a definite purpose on the chosen subject in the given time

(2)   What are the major prerequisites for an IAC process?

The prerequisites for an effective and efficient IAC process are: Subject knowledge, linguistic proficiency, understanding of the target group, awareness of information resources, familiarity in IT tools & techniques, skills & styles in data handling, time &

cost/budget and professional ethics

(3)   Do all types of Libraries require adopting IAC process?
**   If YES OR NO, why?**

No. All clienteles do not need IAC products. Only Special libraries & Information Centres and Documentation centres focussed on special subjects and target group may be in need of IAC process & products. They need because of the following factors and their impact on the institutions and target group:: Information Explosion, Scatter of Literature, Obsolescence, Information Technology, Infrastructure, Manpower, Information needs and demands, User community, Cost-Time-Space effect, Parent institution.

(4)   What are the major products of IAC process?

There is a wide range of IAC products made available either as hard or soft copies as the users' requirement may be. These may be free or fee-based, depending on the type of their producers & consumers. They include: Handbooks/ Guidebooks, Manuals/ Do-it-yourself, Booklets/ Pamphlets, Process /Product Profiles, Reports (Feasibility, Evaluation, Project, Statistical, Research, Status/ State-of-the art, Trend & Forecast), Reviews & Critiques, Newsletters & House journals, Subject Bibliographies/ Indexes & Abstracts, Translations, CAS & SDI Products, Flow charts/ Plans/ Timetable, Project Proposals, Data Compilations/ Summaries, Announcements/ Bulletins, Promotional Materials, Conduct & organize workshops/ seminars, Briefings/ Talks/ Data in capsule/ Compiled data, Demonstrations/ Presentations/ Graphic Displays, Documentary Films, Instructive & Training Materials, Audio/ Video/ Press Clippings, Case Studies and Directories

(5)   Describe the stages or steps in the preparation of an IAC product.

The methodology for planning and preparing IAC products are two-fold. One is the prerequisite and the other is the stages and steps involved in IAC process. Both these are discussed in detail subsequently. IAC process involves three levels of work - Idea, Verbal & Notational Planes. The kind of tasks involved in each of these three planes include Initiation of steps, Scope & Determination, Data Collection, Analysis, Synthesis, Consolidation, Drafting, Content Checking, Editing, Sequencing & Organization, Finalization and Presentation in the form required by user/s.

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Lesson No. 2.2   **Author : Dr. Ajit Singh**

KNOWLEDGE AND SKILLS REQUIRED FOR INFORMATION ANALYSIS AND CONSOLIDATION

Structure :

10.0 Objectives
10.1 Introduction
10.2 Resources Needed
10.3 Staffing
10.4 Manpower
10.5 Qualification of professional personnel
10.6 Knowledge and skill for staff
10.7 Role of future information professional
10.8 Conclusion
10.9 Reference
10.10 Self-Check Exercises
10.11 Answer to Self-Check Exercises

10.0 Objectives

The lesson is structured to achieve the following objectives:

(i) to understand the concept and importance of staffing for Information analysis and consolidation unit;

(ii) to high light the importance of job analysis; job description and job specification in the process of staffing; and

(ii) to tabulate the essential qualification, knowledge and skills for a successful professional in a information analysis and consolidation unit.

10.1 Introduction

Information analysis and consolidation (IAC) activities are not of recent origin. Its history can be traced back to the earlier century and according to Kertesz "these activities are imbeded in the tradition of nineteenth century scientists such as Beilstein and Gemelic, who accepted the challenge to bring some kind of order in ever increasing flood of data, to make experimental finding conveniently available to other scientist" by means of their hand book and data compilation. However, the term "Information Analysis and Consolidation" is very recent . Broadly speaking IAC activities include selection, evaluation, analysis, interpretation and synthesis of a body of information, in a clearly defined specialized field with be intent of compiling, digesting, repackaging or otherwise oranizing and presenting pertinent information in a form most authoritative, timely and useful to the different requirement of different categories of users. Therefore, information consolidation units are useful source for the information needs of the users.

Human resources are the greatest assets of an organization. In a study of the capacity of U.N. development system, it has been accepted that, "Human rather than capital is the key to development." Staff can make or mar an organization. Because people in an organization determine the performance capacity of an organization. Therefore, increasing attention is being paid to human resource management.

10.2 Resources Needed:

For the efficient and effective working of an Information analysis and consolidation units, the following resources are required :

(i)   Human resources

(ii)   Technical resources

(iii)   Physical resources

(iv)   Information resources

(v)   Financial resources

Like libraries, information analysis and consolidation units are service organizations or in other words labour intensive organizations. And key to their efficient and effective functioning depends on the people who man them. A unit may have an outstanding collection of information. Sources (print, non-print and electronic), access to wealth of on-line resources, cutting edge automated systems, but if does not have well trained, skilled competent staff, the unit will not be rated high in the eyes of users.

10.3 Staffing:

Organizations are social and technological devices that enable the accomplishment of goals that are too large and complex to be executed by a single person. Organizing process creates various posts/ position in the organization to be occupied by individuals. Each position has certain specific contributions towards organization goals. Hence the person occupying a particular position should have the ability/ skills to make valuable contribution. Such contributions could be made by staffing process in which, we choose, the right person at right position at right time by fitting a square peg in to a square hole, to avoid wastage of energy and resources.

Following are the essential basic steps for efficient staffing of any organization or information unit.

10.3.1 Job Analysis:

After projecting the manpower needs of IAC unit, one has to predict what capabilities would be required in the people to handle the job effectively. In the case of technical and professional personnel, such prediction is more important. As such most of well managed organization go through job analysis, so that they can fix up the characteristics which are required in the professionals, so that selection and training become more effective. Job analysis could be guided on the following line :

(i)   What is the objective, nature and scope of the job in the IAC unit and what is the purpose of the I AC unit ?

(ii)   What type of projects (information needs of the clients) are under taken

in the job?

(iii)   What type of decision would by professional/ technical incumbent on this job?

(iv)   What is the authority ? How many subordinates will work under him .

(v)   With what type of personnel does the incumbent contact?

(vi)   What is the nature of the control/system.

On the outcome of the job analysis on the above lines, would be based the job description and job satisfaction.

10.3.2 Job Description :

Information provided by the job analysis process is written into record in the form of job descriptions which are systematic summaries of information gained from notes taken and recorded in the process of job analysis. They describe the work to be performed, the responsibilities involved, conditions under which the job is done, relationship with other job, and **SKILL** and **TRAINING** (knowledge) required.

10.3.3 Job Specification:

Job description refers to a summary of the personal characteristics required for the job. It describe the person required, in terms of professional and educational qualification, experience, apptitude, etc. It also describe the condition to be encountered on the job. The basic difference between job description and job specification describes in detail the contents of the job, while the latter describe the requirements of person performing the job.

The job specification is a major tool in the staffing process, because modern job specification, in so far as is possible, seeks to describe measureable qualification, such as level of education, experience in years, intelligence level in terms of score, professional knowledge in terms of performance on the standard professional levels.

As per discussion the job specifications in information analysis and consolidations unit require the following man power with measurable knowledge and skills.

10.4   Manpower

The efficiency and effectiveness of the ICU would largely depend on the competence of the staff and on the facilities and environment provided for their work and development. The ICU is expected to provide a variety of information services in specialised subject-fields and interact with R&D personnel—engineers, technologists, scientists, etc.— man, management personnel, extension workers etc. Therefore, the professional staff should have high qualifications in appropriate subject-fields (e.g. engineering, physical sciences, biological sciences, etc.) and in library and information science, adequate experience and training, innovative capability, proper attitude and pioneering spirit towards work so that there will be harmony among the mutual enrichment of the functional sub-unit .

The two categories of personnel for the ICU are.

(i)   Professional staff: and

(ii)   Support staff

The different levels, the number of persons in each level, their qualifications, cost of employing them, etc. will depend upon the type, quality, and quantity of work to be done in each sub-unit .In this context, the use of national standards compatible with international standards for estimating the manpower is recommended .

Nevertheless, the following questions may bee asked while planning for manpower in ICUs at national level:

(1)   **Existing:**

(a)   What is the number of trained personnel ? What is the estimated national need?

(b)   To what extent has their training been indigenous, to what extent outside the country?

(c)   Are the information and library professionals and information specialists in other professions suitably compensated ?

(d)   Are the nationally recognised standards for education and training in the information sciences?

(2)   **Potential for Training Manpower:**

(a)   What is the capacity of indigenous training institutions?

(b)   Is there fiscal supports for trainees —within or outside the country ?

(c)   Do UN agencies or non-governmental organisations (including private organisations) sponsor indigenous training programmes? Fellowships for training overseas?

In other words, manpower resources for ICU should be examined from the point of view of

-      Determination of staff
-      Skill requirements and levels of training of staff
-      Availability of staff at different levels
-      Selection of staff
-      Cost estimates and salary structure

Table : Staff Formula

S.N.	Section with Functions	Annual Quantum of work
(1)	Book /Document Section - Selection, Ordering and accessioning of purchased as well as books received on exchange or as gifts.	3000 documents annually added
(2)	Periodical publications Sections -Ordering, receipt, preparation and display of current periodicals, their cumulation and preparing for binding on the completion of volume.	500 periodical titles received
(3)	Technical Processing Sections -Classification, Cataloguing, etc.	1500 to 2000 documents annually added.
(4)	Circulation Section -Charging and discharging of books/ documents all through each day.	1500 gate-hours, the circulation counter is kept open
(5)	Reference Section - Helping the users in the choice of books and articles, answering reference queries.	50 queries/readers in a day
(6)	Maintenance Section - Maintenance of books/periodicals in the correct sequence on shelves, maintenance of gangway guides, bayguides, shelf guides in the stack. -Daily replacement of books/document returned. - Preparation of books for repair and binding	One person for every 100,000 volumes in stock and one person for every 6000 documents added annually.
(7)	Information services Section -Abstracting, State-of-the art report/ Trend report service, Critical data compilation, Critical review etc.	1.5 Man-year, on an average, for each service
(8)	Supervisory Staff	One for every 1500 hours the ICU is kept open.

Note: The staff formula does not include the staff for supporting services, such as liasion, translation reprography, etc.

10.5 Qualifications of Professional Personnel

The following table indicates the qualifications—academic, professional—, experience, etc. for the different categories of personnel to be employed in an IC.

Table : Qualifications of Professional Personnel

S/N	Category of Personnel with function	Academic M.Sc. B.E.	B.Sc.	Professional Master in Lib. & Inf. Sci.	Bach. in Lib & Inf. Sci.
1	IC Director /Head Overall Management, policy-making, Planning, -Organisation, Coordination -Control, Leadership External relations etc.	EX D	-	X	-
2	IC Deputy Director - In charge of unit with functions similar to those of Head, But responsibility confined to the unit concerned	EX D	-	X	-
3	Senior Information Analyst -To perform specific tasks such as information resource building; processing, indexing, reference service, information consolidation services	E DX	X	X	
	Junior Information Analyst -Functions Similar to Senior Information Analyst but on a lower level.	E D	X	- X	X
5.	Information Assistant	E D		Cert/Dip in Lib. Sci.	
E =Essential Qualifications			D= Desirable Qualification		

Annotation

1. Information analysis and consolidation activities require a good knowledge of the subject (M.Sc. or Ph.D level) and training in analysis, abstracting, evaluation and organisation of data and information.
2. For data compilation, a person with a Master's degree in statistics and experience in data processing should be preferred .
3. For reprography work, technical qualifications in reprography and about two years of practical experience are desirable.

4.   For translation work, adequate knowledge and experience in translation and of editing of translation is necessary. Persons should have good knowledge of the desired foreign language(s) and of English.

9.6   Knowledge and Skill for providing Information Service

In the context of information technology, some of the questions that need to be answered are:

(a)   What knowledge, skill and attitude should the information professional possess in order to provide information services?

(b)   Is it necessary to teach traditional knowledge-Document selection, acquisition, classification, cataloguing, etc, and skill or can they be done away with in the teaching programmes?

(c)   What are the problems likely to be encountered due to the application or technology ? Can methods for overcoming them be taught in library and information science education programmes?

It has been observed that by adopting suitable mechanisms/ methods is possible to provide certain information services like reference and current awareness services by the use of information technologies, especially computer technology. But one group of services which seem to be not amenable as yet to IT is the group of information consolidation services. Information consolidation services/ products include reviews, state-of-the-art reports, critical reviews, trend analysis, forecast reports, handbooks monographs, technical manuals etc. But, the creation of such products a involves the participation of several groups of specialists. It is in this context that the role of library and information science personnel becomes very important . But , a basic pre-requisite for playing this role has been the acquisition of knowledge and skills pertaining to information consolidation activities.

10.6.1 Knowledge:

Knowledge pertaining to the following methods/ techniques etc. are required for preparation of information consolidation service/ products:

(a)   Methods for studying the highways and byways of subjects .

(b)   Data/information analysis techniques

(c)   Reference Framework formulation

(d)   Methods for planning and conducting user studies

(e)   Methods for identification and selection of core documents, especially core periodicals.

(f)   Difference types of information consolidation services / Products and their preparation.

(g)   Techniques for directory preparation .

(h)   Condensation techniques, such as abstracting, extracting, etc.

(i)   Evaluatory techniques for assessing the quality or intrinsic merit of information and information consolidation products.

(j)   Consolidation and Integration techniques including packages and repackaging .

(k)   guidelines for arrangement of idea in idea plane, verbal plane and notational plane

(i)   Technical writing techniques

(m)   Information for preparation of supplemental audiovisual aids to information consolidation products.

(n)   Feedback techniques (Seetharma 1988)

10.6.2 Skills

Mere possession of knowledge would not be sufficient, but one should possess the skill or skills to apply knowledge gained fruitfully. Therefore, it is necessary that information professional's should posses:

(a)   Traditional skills of acquiring, organising and dissemination of information

(b)   Skills in communication, systems analysis, interpersonal relations, financial planning and marketing.

(c)   Managerial skills for technology management and application to library and information work, problem-solving, decision making etc.

(d)   Skills to analyse, synthesis, intepret, consolidate and evaluate information and knowledge.

(e)   Advocacy skills, a greater sensitivity to social and political forces and an increased ability to define and articulate value and values systems (Bearman, Bender, Nitecki).

In addition to the above mentioned skills the information professionals must be able to recognise and assess the implications of their actions and actions of other and must be able to act decisivley when humanity and technology threaten to clash Such skills as Linda Resnik points out, must be planted and nurtured and not just lift to chance. Specifically speaking, the skill/ability required for the preparation of information consolidation products would be:

(a)   To interact with users and recognize their informational needs .

(b)   To identity and organise a team or group specialists for the preparation of information consolidation products.

(c)   To specify precisely the subject to be covered by the IC product.

(d)   To specify the product user group and target group .

(e)   To identify the products to be prepared for different user groups

(f)   To identify sources for selection of information.

(g)   To identify and select relevant information

(h)   To technically process and evaluate information .

(i)   To consolidate and integrate information into an organised text.

(j)   To prepare and provide supplemental aids to the users of IC products .

In addition, the information scientists should have the knowledge and skill for determining the media-print media, audiovisual media, electronic media, etc. and format in which an IC product should be presented to enhance its potential use, comprehension, assimilation, and recall. Further, it would be helpful if one has sufficient knowledge and skill in determining the channels of dissemination and in marketing of the IC products.

10.7 Role of Future Information Professionals

While keeping into future and optimistically speaking , Becker (1983) perdicts that librarians and information scientists are destined to play increasing roles in establishing connections between information resources and people in the coming information society. In a similar venture, Foskett comments that ".... It would be tragic irony if the medium becomes the message, technology becomes the master and not the servant and librarians found themselves once more cast in the role of Keepers, not of books, But of machines !... Librarians must not neglect their role as repositories, but become also mediators and promoters of communication ..."(Foskett, 1984).

Other interesting roles suggested for the information professionals are:

(a)   Agents of social transformation by offering users, resources for developing their own abilities and provide information relevant to daily need as well as opportunities for communication with other individuals and groups .

(b)   Activists, by asserting power to regulate the flow of information and establish the frontiers of access to knowledge .

(c)   Assume a commitment to continuing education .

(d)   Advisory role, as the end users will interact directly with information through online facilities /services.

(e)   Gatekeepers who control the flow of communication and a guide.

(f)   Generalist with a linking function and would imply the development of horizontalists (as opposed to verticalists) who would carry out two kinds of synthesis.. synthesis within one discipline and interdisciplinary synthesis.

(g)   Pop designer (Profile of Public designer) who would profile the different kinds of ideas coming from the public so that the decision - makers could see what the needs and desires of the public are.

(h)   Sniffer for information

(i)   Mixer of Modellar of information, which would facilitate creation models which would enable us to develop more complex concepts.

(j)   Gate-opener, who will have to work diligently, strongly, and even dangerously against the growing tendency to close up information, to own information, and not let other people have it (Gelines and Alain 1984), Gleave et al 1985, Jungk 1972, Pogue 1983, Viera 1983).

10.8 Conclusion:
The role of human resources is the key to the success of any institution/ organization. They can make or may it. Therefore, for the effective and efficient working of the organization well qualified, experienced staff should be placed at right place according to the job description and job specification norms. For placement of the staff the prescribed levels of knowledge and essential skills should be taken into account for productivity in the organization. This will lead to job satisfaction and job involvent in the staff of information Analysis and Consolidation Units.

10.9 References

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5. Saracevic, T. and Wood, J. S. : Consolidation of Information. A hand book of Evaluation. Paris Unesco, 1981.

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10.10 Self-Check Exercises :
1. List resources needed for IAC.
2. Enumerate essential basic steps for Staffing .
3. Discuss skills needed by ICP personal to apply knowledge.

10.11 Answer to Self-Check Exercises.
1. See Section 10.2
2. See Section 10.3
3. See section 10.6.2

Lesson No. 2.3   **Author : Dr. Ajit Singh**

PLANNING AND MANAGEMENT OF INFORMATION CONSOLIDATION UNITS

Structure

11.0   Objectives :

The lesson is structured to meet the following objectives:

(i)   Conceptual information about Consolidation of Information and information Consolidation Unit:

(ii)   Steps involved in the planning and management of ICU;

(iii) Discussion on essential resources required for I. C. U., and,

(iv)   Evaluation of I.C.U.

11.1   Introduction :

According to the Peter Drucker, during the last fifty years., society in every developed country, has become a society of institutions. Every major, task, whether economic performance or health care, education or the protection of the environment, the pursuit of NEW KNOWLEDGE, is being entrusted to big organization, designed for perpetuity and managed by their own management. On the performance of these institutions, the performance of modern society-if not, the survival of each individual-increasingly depends." In other words, the society is controlled by organizations, units, etc., including both, large and small.

The process of transfer of information /knowledge consists of chain of activities, the main links being generator, editor, publishers of primary publications, indexing

and abstracting, journal producers, libraries, documentation and information centres, on line services, information, institutions and the end user. The institutions that normally perform these activities can be broadly grouped in three categories as under:

 (i)   Knowledge creating institution (Research Laboratories, R and D institution, higher education institutions, and research attached to Universities, etc.;

 (ii) Knowledge / information processing and disseminating institution (publishers, statistical data organization, S & T data centres, etc.; and

 (iii) Institutions that-collect, store, process disseminate and service knowledge /information recorded in various forms (libraries, documentation and Information centres, information analysis and consolidation centre/Units etc.)

 Information consolidation is a process by which text (s) or message (s) purposely structured from existing public knowledge to affect the private or personal knowledge and decision of the individual who otherwise may not be able to effectively access or use this public knowledge from the original amounts or in the original structure and form. Perhaps this explains Alvin Toeffler statement in "Third Wave" that "............ many people feel cut off because the very package in which information arrives are unfamiliar............."

11.1.1 Information Consolidation Units:

 While the origin of Information Analyses Centre (Now redesignated as Information Consolidation Units (ICU) was due to the untiring efforts of a few dedicated and devoted specialists, but the present day's ICUs have largely been due to the interest and effect of numerous sponsoring agencies of private or public sector. Therefore, the ICU's activities are based on:

 (i)   Objective of the parent institution;
 (ii) Expressed or established user's need;
 (iii) Problem area;
 (iv) Elaboration of the subject to be covered ;and
 (v)   Proliferation of literature on the subject.

11.1.2 Planning :

 Planning means preparing one self. Well begun is half done, therefore, to be prepared is half the victory. It spells out actions to achieve objectives of the unit. It shows the final destination and usually the best way to reach at without actual reaching it. Therefore, planning is a dynamic process of choices and options and shapes the tomorrow of the Information Consolidation Unit. It is road map for decision making about human, financial and other resources. It is the sense to spell out the specific, time bound, measurable and verifiable objectives of the ICU. It is the process of deciding in details how to do things before you actually start to do it.

11.1.3 Management :

Management is the central hub of our national, regional and personal activities. Therefore management is a basic operative force in all complex and purposive organization/units .Management is the process and agency which guides the operations of an organization/institution units in the realization of established goal. It provides tools and techniques for advancement. According to Koontz, "Management is the art of getting things done through and with the people in formally organized groups" All these definition are equally applicable to ICU's. The planning and management of ICU's includes;

(i) Policy formulations, (ii) Planning (iii) Resources needed (iv) Organization and Functional structure, (v) Budget formation, (vi) Dissemination and Communication, (vii) Marketing, (viii) Advisory broad.

11.2 Policy Formulation:

Policy is the blue print for further development. It envisions a key enabler. It creates new ideas and feasible direction to enrich lives and to produce new value. However, it is not possible to formulative policies to cover every decision or contingency. Therefore, as an alternative, policies that are based on ICU's requirements and priorities and covering all major areas of activity, need to be, formulated. Some of basic points of policy formulation are as under:

(i)   What are the major note of the Information Consolidation Unit (ICU)?
(ii)   What are the components of the ICU and how are they related ?
(iii)   What information services are provided and how?
(iv)   Are the different categories of uses and level of service which require enunciation through policy statements?
(v)   What are the role and responsibilities of information Consolidation Unit in relation to outside agencies?
(vi)   What are the roles, responsibility and relationship of users vis-a-vis the information consolidation services administration and staff?
(vii)   What are the lines of authority and parts of decision-making ?

Policies formulated may be used to direct or improve, on a long-term basis, the operation, programme of services, and resources. According to Atherton (1977) policies should be so formulated that, they are generally applicable and flexible in meeting a number of contingencies and at the same time, they must clearly indicate the instant of the ICU in regard of specific areas of concern.

11.2.1 Process of Policy and Use :

According to Atherton (1977) following is the framework for policy analysis and development which encompasses several tasks targeted at producing an-on going process:

(i)   Initiation of policy development process;
(ii)   Review of existing policies;
(iii)   Analysis of existing policies for the evaluation of the effectiveness.

(iv)   Recommendation regarding new and revised policies.

(v)   Process of formulating policies.

(vi)   Preparing a policy manual showing topical presentation of policies; format of policy statement; and index to policies.

(vii)   Dissemination of policy ; and

(viii)   Securing periodic policy review in order to keep it on the trac and evaluate it for updating.

Following are the areas / concerns on which to develop policies:

(a)   Policy decisions on collection of material;

(b)   Services and Access to materials;

(c)   Staff resources; and

(d)   Over all management consolidations.

11.3. Planning:

While the advancement and advantage of planning are crystal clear, it may be pointed out that without planning most ICU's will not deliver goods, being poorly structured, organized and ill-equipped to meet with the objectives of the services, intended for audience. The results of planning would be three fold.

(i)   It gives direction to growth and complexity;

(ii)   It minimizes adhoc decisions; and

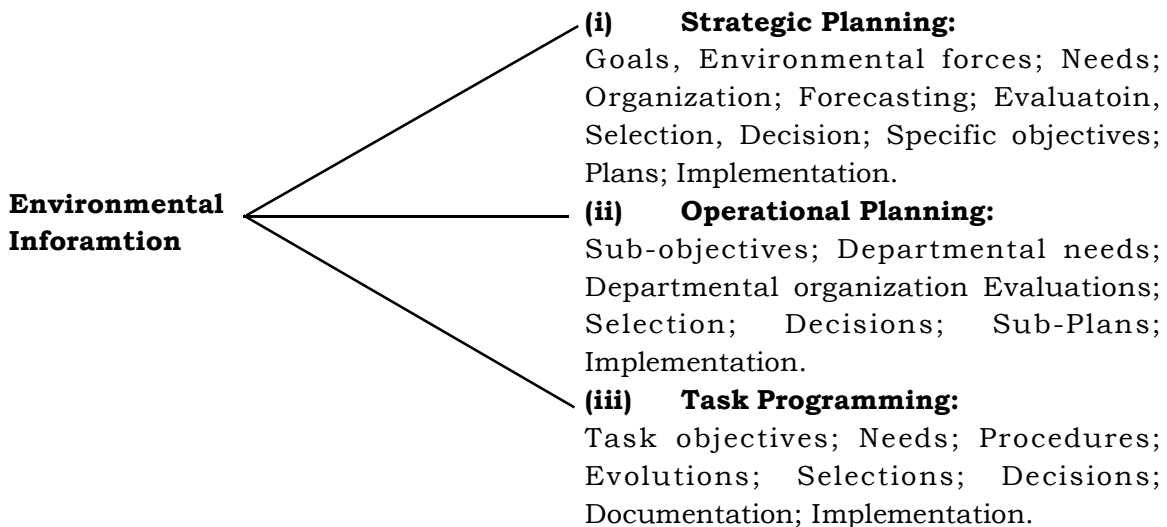(iii)   It provides a basic framework for services.

In fact there is a need to develop and establish a conceptual framework.

11.3.1   Planning Approaches :

There are three approaches of planning process and its conceptual framework.

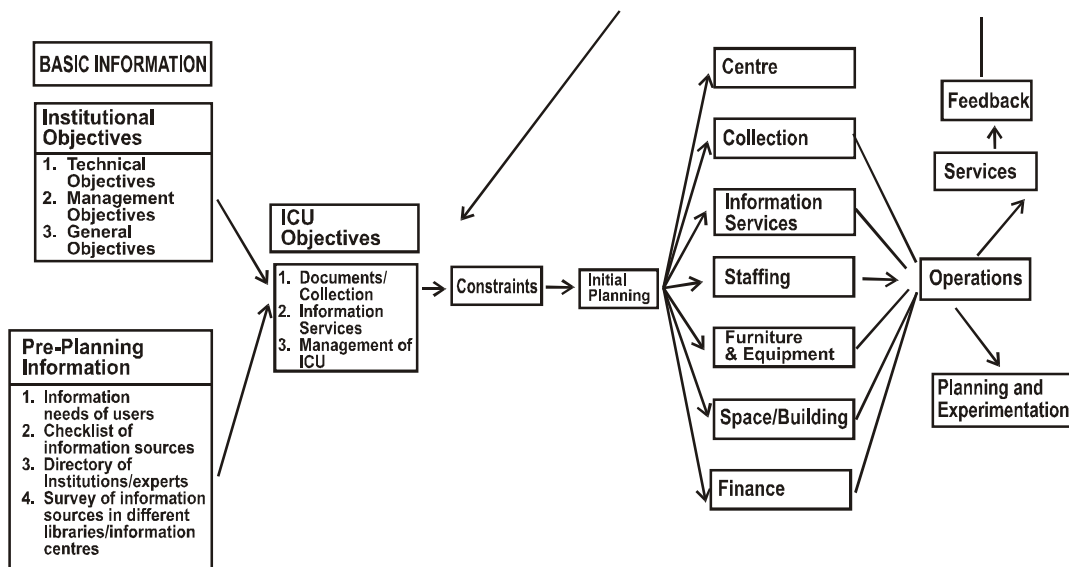### (a)   System Approach to Planning.

A conceptual framework or model for planning may be established. After analysis, we may find that its structure should include three major elements as projected below:

Environmental Inforamtion

(i)   Strategic Planning:
Goals, Environmental forces; Needs; Organization; Forecasting; Evaluatoin, Selection, Decision; Specific objectives; Plans; Implementation.

(ii)   Operational Planning:
Sub-objectives; Departmental needs; Departmental organization Evaluations; Selection; Decisions; Sub-Plans; Implementation.

(iii)   Task Programming:
Task objectives; Needs; Procedures; Evolutions; Selections; Decisions; Documentation; Implementation.

While the *'Strategic Planning'* is systematic grappling with future opportunities, Problems and alternative sources of action, *'Operational Planning'* is the linking of organisational components (i.e. techniques, materials, procedures, strategic plans, rules, people, capital and facilities) to facilitate, the flow of interrelated events in a particular function. On the other hand, *'Task Programming'* contains plans of specific tasks of be carried out where the emphasis is on technical activities.

(ii)   Flow Chart:

The chart indicate the major step and their sequence in the planning and development of ICU.

Overall Planning Context
(Source : DRTC Seminar, 1981)

The above figure indicates the major steps and their sequence in the planning and development of an ICU. The basic elements of the ICU which should be carefully planned and developed are: (i) Information sources or database: (ii) Information services; (iii) Manpower for the operation and management; (iv) Furniture and equipment; (v) Building; and (vi) Finance.

11.4   Resources Needed:

The resources needed for the operational and management of ICU would include:

(i)   Human resources
(ii)   Technological Resources
(iii)   Physical Resources
(iv)   Information Resources
(v)   Financial Resources.

In order to plan systematically for the resources, it would be helpful to consider the checklist of major parameters or questions to be asked and answer found, to examine an existing information infrastructure and /or in planning a new one as discussed below:

11.4.1   Manpower Resources

The efficiency and effectiveness of an ICU would largely depend on the competence of staff and on the facilities and environment, provided for their work and development. The two categories of personnel needed are: Professional staff and Support staff. The different levels, the number of persons in each level, their qualification, cost of employing them etc., will depend upon the type, quality, and quantity of work to be done. In this context, the use of national standard for estimating the manpower is recommended . Infact, manpower resources for ICU should be examined from the point of view of : (i) Determination of staff. (ii) Skill requirements and levels of training of staff, (iii) Availability of staff at different levels, (iv) Selection of staff, and (v) Cost estimate and salary structure .

11.4.2   Technological Resources

In a given context, a decision is only as good as the adequacy of the information available to the decision maker and the capacity and efficiency with which he handles processes and applies the information. Therefore, a technology-which may be designated as Information, Technology-which facilitate collection, storage, organisation, processing analysis, presentation, communication and dissemination of data for decision making using mechanical or electronic means, is indeed an essential support to development.

11.4.3   Physical Resources

The physical resources need for an ICU include furniture, equipment, building/ space facilities ,etc. A feasibility study on furniture/equipment is required to cover: (i) List of specification of major items of furniture/equipment required, (ii) Selection of furniture/equipment, (iii) Cost estimates, and (iv) List of selling agents /suppliers. The estimates should be based on the document collection, number of readers, and number of professional/no professional staff.

For space planning, the following factors may be taken into consideration. (1) Location -Alternative of location and selection of optimum location, (2) Site - Possible alternative sites and selection of alternative sites :(3) Cost estimates- Land, taxes, legal expenses ,rights of way, rents, etc.; (4) Local conditions -climates, site and terrain, transport facilities ,water supply, power supply, waste disposal manpower fiscal and legal regulations and constructions, erection, maintenance facilities, etc. Appropriate national or existing standards can be used for working out the requirements.

11.4.4   Information Resources

Information sources building is one of the important functions of any Information Centre. Information resources are of two kinds, namely documentary and non-documentary. While the former include the primary, secondary and tertiary documents,

the latter include the human and institutional sources of information. The objectives of the feasibility policies that should govern collection development policy, (2) Identification of the present needs and projected future requirements, (3) Preparation of checklist of information sources to suit the needs, and (4) Identification of the extent to which the needs are being currently met by the existing resources and the context to which the resources have to be supplemented .

11.4.5 Financial Resources

Financial resources required for the establishment, operation and maintenance of an ICU is very crucial for the functioning of the centre. Here it is necessary for analysis of costs to determine sources and ways of financing . The cost analysis may be based on an   assessment of expenditure by purpose and can be classified into two categories: Capital and Current.

(1)   **Capital Expenditure :** Expenditure for the acquisition of site, building, equipment, furniture, permanent collection of materials, vehicles etc.

(2)   **Current Expenditure :** Salaries of personnel, running costs, maintenance costs, expenses for materials and supplies miscellaneous expenses.

The budgeting requirements can also be examined under three categories: (i) Start up or initial cost: (ii) Annual operating budget; and (iii) Future needs.

11.5 Organizational cum Functional Structures

The organisation structure of the ICU should be in conformity with the functions, activities and programme of the ICU. In other words, the component units of the ICU should be functionally oriented. They should not work in isolation, but in a spirit of cooperation and coordination among themselves .The organizational structure should be clear, complete and integrated so that it would facilitate effective control of the various activities of the ICU. It may be worthwhile to consider the ICU as comprised of a Technical Library Unit, Information Service Unit, Information Use Promotion Unit and Common Facilities Unit.
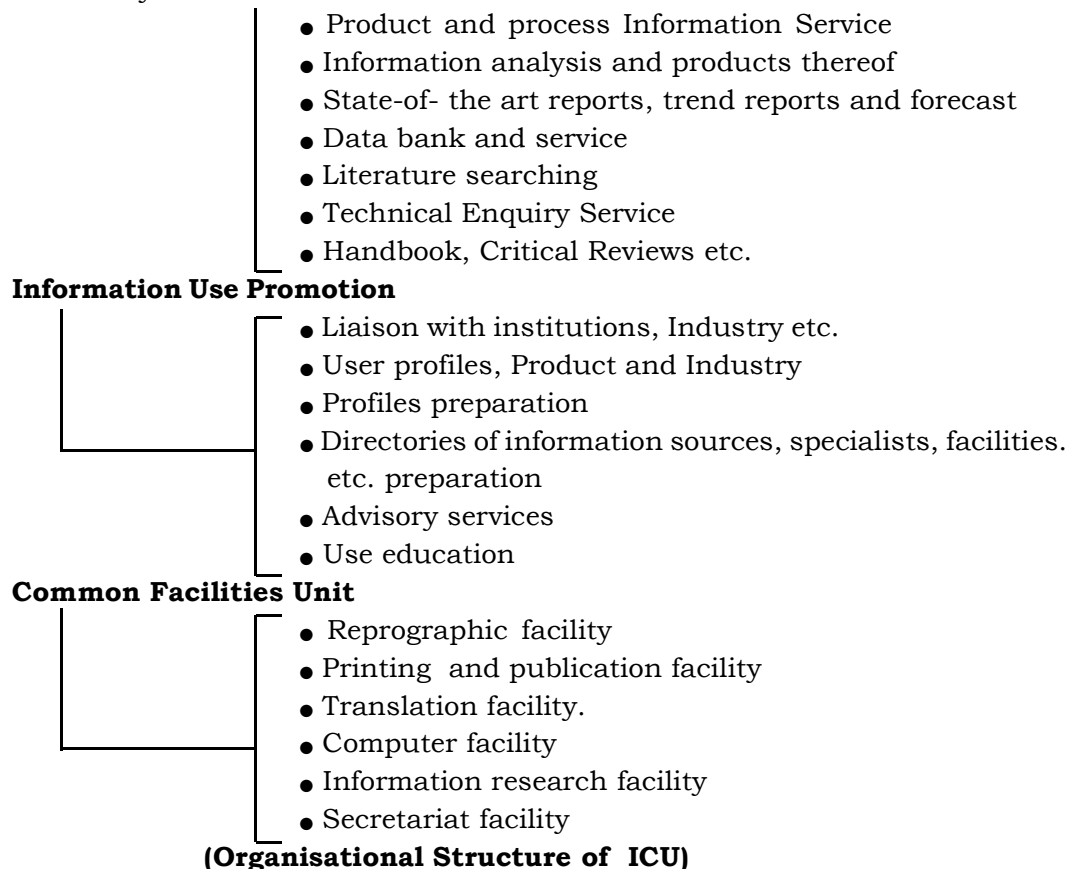
The broad functions of the different units of the ICU are indicated in the following chart :

Technical Library

- Information sources, documents, acquisition.
- Technical Processing of documents
- Documents circulation and iter library loans.
- Documents display and maintains

Information Service Unit

- Reference services
- Referral service
- Current Awareness Services
- Indexing and Abstracting Services, Technical notes.
- New announcements; Newsletters

- Product and process Information Service
- Information analysis and products thereof
- State-of- the art reports, trend reports and forecast
- Data bank and service
- Literature searching
- Technical Enquiry Service
- Handbook, Critical Reviews etc.

Information Use Promotion

- Liaison with institutions, Industry etc.
- User profiles, Product and Industry
- Profiles preparation
- Directories of information sources, specialists, facilities. etc. preparation
- Advisory services
- Use education

Common Facilities Unit

- Reprographic facility
- Printing and publication facility
- Translation facility.
- Computer facility
- Information research facility
- Secretariat facility

(Organisational Structure of ICU)

11.6 ICU Budget Formation

Among the various methods of financial estimation (Seetharama., 1990. Programmed budgeting, especially its sophisticated version namely Planning Programming Budgeting Systems (PPBS) seems to be ideal for ICUs. This is because managements are cost-oriented and would seek justification for every dollar/ rupee spent. As the purpose of PPBS is to serve as a means of providing policy makers with an analytical evaluation of existing and proposed activities, supported whenever possible, with quantitative measures of performance- that is costing of ICU operations — this approach in budgeting is considered more useful. Details regarding PPBS, its advantages and limitations as well as its application in libraries and information system have been discussed in several articles in library literature. Essentially, it would involve in the breaking down of ICU operations into the appropriate programs, then cost out each programme without reference to present/existing budget. In other words, this method would involves the following components (present/ existing budget. In other words, this method would involves the following components).

(i)   Objectives of the organization— here, of ICU.

(ii)   Activities (and analysis of procedures) which relate to the objectives;

      (iii)   Costs :

      (iv)   Benefits and by products ;and

      (v)   Analysis of alternatives.

11.6.1 How to arrive at Appropriate Figure:

There are several approaches that can be followed for arriving at the appropriate figure in a budget. For example, one can review expenditure of previous year or use library statistics and data originating from trade, library associations, etc. or use library standards for determining the size of budgets. Following are the methods of estimation of figure in budget:

      (i)   Review of the past expenditure;

      (ii)   Use of ICU statistics and data from other sources.

      (iii)   Use of standards:

      (iv)   Financial requirements, i.e. planning cash, launching cost and operating costs .

11.7 Dissemmination and Communication

The ICU with its function of acquisition and precessing of information sources is in a strategic position to disseminate information to all categories of users. Dissemination of information can be done through various channel/communications media— oral or written, formal, or informal. All communication, however ,should be service—oriented and purposeful. The purpose of an information dissemination service may be one or more of the following:

      (i)   To keep the users abreast of current developments in their areas of interest;

      (ii)   To inform about the current additions to the ICU;

      (iii)   To provide information which may help to solve technical advances and modernization.

      (iv)   To provide relevant information and comparative data about particular products or process.

      (v)   To review (and evaluate) the developments in a specific subject field-scientific, technical and techno-economic; and

      (vi)   To provide an exhaustive list of documents with or without annotations/abstracts on a specific topic.

While some services are provided on request or expressed need, others are provided in anticipation of a demand . Some service may be specifically be addressed to a user. Others maybe provided as a common service. The services that can be generated in an ICU are :

      (i)   Reference service—Ready Reference Service, Referral Service, Literature Search.

      (ii)   Current Awareness Services

      (iii)   Indexing and Abstracting Services

(iv)   Competitive and Evaluative Services

(v)   Special Service to Specific User Groups

(vi)   Supporting Services- Liaison service, Translation Service, Reprographic service, editorial and publishing service.

The possible information consolidation products include:

★   new announcements, newsletters

★   pamphlets, brochures, questions-answer sheets

★   monographs, technical reports

★   critical reviews, state of the art reports, handbooks.

★   technical guides and " how to" booklets

★   operational or maintenance manuals; specifications; standards

★   recurring summaries of advances in a topic; short text books

★   market reports; industry reports

★   statistical condensates, cross– tabulations, or correlations

★   briefings

★   radio or T.V. shows

★   comic strips, photonovels

★   wall posters

★   lecture, tutorials

★   demonstrations, exhibitions

★   questions-answer sessions

★   information 'hotline'

★   pre-recorded telephone message

★   referral (with assessment of the referred to party or organisation)

★   video newsletter

★   audio- visual presentations (packages)

★   videotapes, videodiscs for training

★   computer on line searching and manipulation of output

★   view text, teletext

All the above- mentioned products may not be generated in developing countries due to economic and technological constraints, but these are recognized products that can be generated/ produced in an ICU.

11.7.1   Target Audience

Dissemination of information to user categories through information service/ products will encounter success only when they are oriented or targeted to their needs. In this context of targeting, information on the following attributes of the user group would be helpful-specific purpose for which the information consolidation product is needed, intellectual standard of the user group, users, preference to a particular kind of information user, preference of package-print (hard copy, filmed copy, etc.), audio-visual, demonstration etc. —, users' preference of the packaging format, etc.

11.7.2   Dissemination Channels
In the development and creation of an information consolidation product, it is necessary to consider the means by which it can be put in the hands of the users. A dissemination channel is defined as the means of transition of mechanisms by which information consolidation products are distributed and delivered to users. Some of the more important channel for dissemination include.

(i)   Interpersonal delivery-products personally delivered to each user.
(ii)   Group personal delivery-products given to users at meeting, demonstration, etc.
(iii)   Strategic placement- products put at key sites for users to pick up, etc.
(iv)   In-house dissemination
(v)   Local depository-products circulated from a library, extension service, etc.
(vi)   Mass media- print.
(vii)   Broadcasting radio, T.V.
(viii)   Mail and other means of public distribution
(ix)   Telecommunications- telephone, satellite, etc.
(x)   Computer networks-online systems, computer conferencing, etc. (Saracevic and wood, 1981)

11.7.3 Pre-Testing
While each of the above mentioned dissemination channels have distinct advantages, the users have their own preferences. These references may vary depending on the nature and stage of activity they are involved in. Therefore, pre testing becomes necessary. This, perhaps, can be done by posing three kinds of questions to the users.

(i)   Which information channels do you use, or do you prefer to use?
(ii)   Which information channels do you use, or have you used?
(iii)   Where do your ideas originate.

The use of different channels formal and informal- by users may vary depending upon their respective fields of specialization.

11.7.4 Feed back
For better results a feedback mechanism should be set up so that there   would be an interactive communication between the ICU and the targeted groups. Such a mechanism would throw light on the lacunae and shortcomings existing in the information consolidation products and the ICU as a whole. On the basis of the feedback received , the ICU can initiate necessary corrective measures. In some of the dissemination channels like interpersonal delivery, group personal delivery, telephone, etc, feedback is built- in so as to ensure effectiveness. Such channels would, therefore, necessarily be costly.

11.7.5 Criteria for selection of different delivery systems
The following criteria may be used in the selection of different delivery systems:

(i)   Cost;

(ii)   Effectiveness;

(iii)   Timeliness: and

(iv)   Feedback

11.8   Marketing

The importance of marketing was duly felt in other organizations, but the function of marketing has long been overlooked in the information centre setting. This is largely because some information service managers felt that marketing is inimical to the nature of their activities. But with the information world becoming increasingly competitive, marketing seems to have become the tail that wags the dog called information centre. At the same time, there seems to be a common misconception that promotional activities constitute marketing. This is not true as rightly pointed out by Saracevic and Wood (1981) who define marketing as an aggregate of many activities, promotion or advertising being one of them. They have identified that marketing of information consolidation products and services involes at least the following elements :

(i)   *Market research and analysis*-of information needs and wants of population of potential users, their communication of potential users, their communication patterns and habits, economic and other constraints, and other characteristics which influence the choice of an information product or service. This would include suggestions on alternate products and services and evaluation of usages.

(ii)   *Product and development and targetting.*

(iii)   *Costs and pricing* of products and services. The pricing schemes that can be applied are marginal cost, cost-recovery, past prices, variable price, market will bear price, costs plus profit etc.

(iv)   *Promotion* of products and services by brochures, pamphlets, posters, guides, handbooks, advertising, publicity, exhibitions and demonstrations, personal approach, etc., Promotion should be a continuous activity based on an optimal mix of different approaches.

(v)   *User Education* -to ensure the credibility of the product and trust , in its worth and to increase understanding, know-how and skills in using information.

(vi)   *Dissemination*- a process of conveying information through given channels to users and includes the spreading about, distribution and delivery of information products/ services.

(vii)   *Evaluation of products and services* - to be done on a continuing basis based on the users' criteria of quality completeness, comprehensiveness, appropriateness, time lag, case of use, costs etc, Veazie and Connolly (1971) have discussed in detail the factors influencing the marketing of products and services as will as the advantages and disadvantages of service charges for the products and services.

11.9 Advisory Board

Advisory board for management should be constituted for the ICU consisting members for parents body supplemented by outside experts .It can work as executive authority or it can purely be a recommendatory body with limited executive power/ functions.

The advisory board should be kept on a permanent basis and members should meet periodically. For efficiency and effectiveness the terms of reference should be specified within which they can act. The advisory body should be small one and should operate not only as a means of management, but more important as a channel of communication between ICU product, ICU patron and ICU manager.

11.10 Evaluation

The Information Consolidation Unit should be evaluated regularly for its efficiency, effectiveness and to increase productivity. Evaluation process should cover all operation, service, products etc. According to Lancaster (1978-1979) following is the criteria for evaluation:

(i)   Evaluation of Effectiveness (users satisfaction). It is based on the following criteria:

(a)   Cost Criteria

(b)   Time Criteria

(c)   Quality Criteria i.e. coverage, completeness, relevance, novelty accuracy etc.

(ii)   Evaluation of cost Effectiveness user satisfaction related to internal efficiency and cost consideration.

(iii)   Cost benefit evaluation (value of system, balanced against cost of operation.

Another Evaluation criteria could be as under:

(i)   Achievement of objectives;

(ii)   Economic aspects (costs);

(iii)   Feed back from users;

(iv)   Efficiency and effectiveness;

(v)   Actual benefits derived;

(vi)   Effect on role played in advancing technology.

The evaluation should be done by an Internal Review Committee as well as by Expert Group. The review committee should maintain a closer contact with operations; its periodic report should point our achievements as well shortcoming of ICU. These reports are essential for policy making and innovative measures. The expert group should evaluate the quality of out puts/services rendered by ICU . The role should be strictly advisory.

11.11 Summary

In the age of information explosion, the use and impact of information is the

central problem for all information professionals as well as for information science, information consolidation units.

The consolidation evolved as a response barriers to the fruitful use of information The need for management and planning of ICU are emphasized . The resources namely Human Technological, physical, Information and financial aspects which are essential for operation and management of ICU are discussed in detail.

11.12 References

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11.13 Self -Check Exercises

1.   Enumerate resources needed for management of ICU
2.   Discuss ICU budget formation.
3.   State the elements involved in marketing of ICU products.
4.   Discuss criteria for evaluation of ICU products.

11.14 Answer to Self-Check Exercises

1.   See Section 11.4
2.   See Section 11.6
3.   See Section 11.8
4.   See Section 11.10

LESSON No. 2.4   AUTHOR : DR. JASMER SINGH

CONTENT CREATION AND CONTENT MANAGEMENT SYSTEM

Structure

12.0 Objectives

    After careful study of this lesson you will be able to :

i.   Understand what is content;

ii.   Know importance, function, attributes and types of content;

iii. Express content creation;

iv. Define content management; and,

v.   Group various aspects of CMS.

12.1 Introduction

    We are surrounded in an information environment and there is too much of

information around us in an organization. It is also noticed that the actual information requirement of an organization is only a fraction of what is available around us. It is not only, what information we collect, store and use that matters, but also the information we give others about ourselves through our web sites and publications. It is the content of information that makes the information relevant or not, useful or otherwise. It is like searching a needle in haystack at the eleventh hour.

Content is the ultimate unit of information. It has tremendous use in day-to-day life. It has significant role in decision making. Well, all these things were known to the mankind even before mid 1970s. Then, the need for content management system, as we understand it today, started appearing. Any reference to content management should naturally start from what is content.

12.2 What is Content?

In a broader sense and in this context, the word 'content' means what a document contains. The idea of what is contained in documents-be it a book, a periodical or a newspaper, can be further narrowed down. In this sense, chapters or articles or news stories have sections, paragraphs and sentences, advertisements, pictures. These finer components contain ideas. It is precisely these ideas which have to be referred as content.

According to Rita Warren "content means information that is published. Any published data in the form of books, articles in journals, newspapers, magazines, picutres, music etc. can be called as content. All the web based information is content. In a web site, the content consists of text, images, graphics, audio/video etc, which are supported by multimedia tools. Therefore, content is a large amount of information, which is put together to form a cohesive whole. To day web is presenting sites for information, advertisements, images, news etc. and all of them are organized in a meaningful order. Content is information put to use in multiple forms.

In the interactive digital services industry, the term content refers to a vide range of information entertainment, communication and transaction services that combine smart texts, intelligent graphics/simulations, motion in images and texts and are made available to an identifiable user group. Although undoubtedly printed form of content will continue to exist in many areas of technical publications, but content creation with the help of computer industry is moving ever closer to a paperless concept, particularly with the growth of multimedia systems that integrate video and sound.

Help text for software packages is the most common form of on-line content creation. CD-ROM based databases and animated display, hypertext, creation of web-pages for web sites, video and sound are other forms of contents.

As explained above we may conclude that context is the idea contained in a document. Assertions are the most fundamental units of content. Assertion is a single thought or idea unit that conveys a single item of information extracted from a segment of content. It could be a sentence, part of a sentence or even a word. The content is not only confined to the text material, it can be graphic or sound or a moving picture.

12.2.1 Functions

The concept of content is much more deeper than what is just stated. Considering the message or purpose of communication, there are three functions or aspects of content.

1.   **Descriptive Aspect :**
2.   **Counselling Aspect : and,**
3.   **Inferential Aspect**

1.   **Descriptive Aspect :**

The descriptive aspect of any document deals with sum or substance of what is contained in a document. In that, content is theme or gist or the central idea. Also, it means that something is described in it. It is an attempt to give a pen-picture of a person or a place or an event or any other thing.

2.   **Counselling Aspect :**

The counseling aspect or function deals with the advice or the suggestion that is given to the reader or listener or viewer. It tells what is to be done in a given situation. Interpersonal communications ranging fom routine conversation to highly specialized interviews with application in psychiatry and behavioral science to any consultancy situations have the counseling aspect of the content.

3.   **Inferential Aspect :**

The inferential aspect deals with projecting the future or finding a cause of an effect or reading between the lines or reconstructing the past based on facts, Inferential or interpreting is a basic function of any content.

12.2.2 Attributes

Content has two major attributes viz., subject category and direction. Content belongs to certain category of predetermined subjects and it has a direction of communication.

1.   **Category**
2.   **Direction**

1.   **Category**

Category is the name given to any class of things, actions, ideas, relationships which recur with sufficient uniformity and frequency.

2.   **Direction**

Direction of the content refers to the attitude of the author or generator towards any of the categories. The direction may be positive or negative depending on the attitude being favourable or unfavourable. Superlatives and the words like disastrous, excellence, etc. tell to determine extremes of unfavourableness and favourableness. Words lke sensible, satisfying, good, lacks depth, etc. indicate moderate favourableness and unfavourableness.

12.2.3 Types of Content Creations :

P.G.S. Kumar broadly refers to the following content development categories.

1.   **Multimedia Creative Contents**
2.   **Knowledge base**
3.   **Service-based Content**
4.   **Commercial Contents**
5.   **Data Preparation, Management and other IT-enabled services.**

These are discussed below :

1.   Multimedia Creative Contents :

      Creative content developed using a mix of text, graphics, animation, audio and video, is the rage today. Multimedia plays a major role in the development of creative content by using a mix of text, graphics, animation, audio and video. It is effective in creating content for Reference materials, brochure, hand outs, geographic and historical materials, and entertainment materials and games etc. latest developments in multimedia technology, a part from entertainment could be applied in stimulated training, remote maintenance and so on.

2.   Knowledge base :

      Computerization has given fillip to orientation and recreation of existing material. Indexing and abstracting periodicals,yellow pages, directories, registers and so on are redesigned for easy collection, storage, processing and retrieval through use of modem IT tools.

3.   Service-based Content :

      Firstly emerging information technology has encouraged use of non-interactive : TV, video and audio programmes to create CD borne packages for instant use. Distant education through web based education and training has taken off because the technology offers connectivity. Web based other such programmess are successfully functioning in various self help programmer, counseling and so on.

4.   Commercial Contents :

      Application of e-commerce technology has got a fillip as a result of the spurt in globalization efforts. It anticipates facility to make payments and goods delivery, management of information security, sensitivity (national security), confidentiality and privacy aspects, supporting mechanism against white collar crimes and so on. Vast amount of information needs to be organized and reorganized into web sites and portals.

5.   Data Management and IT Services :

      Routine data entry operations are essential in the fields such as Medical, Banking, Insurance, and Customer Services, etc. Data may be managed in various forms, such as voice, messages and e-mails etc. It may also be through transfer of files, information download from web sites, and so on.

12.2.4 Inputs for Content Development:

      1.   Intellectual inputs

      2.   Skill or Know-how supports

      3.   Physical inputting efforts

1.   Intellectual inputs

      Major intellectual inputs come from subject specialists. They produce the basic materials which are redesigned by copy writers and scriptwriters.

2.   Skill or Know-how Supports :

      Information scientists are required for classification and organisation of information, use of controlled vocabulary and so on the role is more significant in knowledge base development.

      Aesthetic content creation also requires close involvement of graphic

designer, animators, and audio composers. Full range of professionals for video production including still photography video photography and editors. Authoring specialists integrate the text, graphics, and animation, audio and video components together to tell a story, is not as significant as it is usually made out.

3.   Physical inputting efforts :

Content creation also requires significant efforts in data entry, cleaning and validation, and painful proof reading. One could be easily trained to perform such mechanical jobs. However for tasks such as medical transcription, one needs to acqure skills to decipher unfamiliar accents and also technical terms.

12.3 Content Management (CM) :

12.3.1 What is Content Management?

Content Management, in a nutshell, is effectively collecting, managing and making information available in targeted publication. This is better understood if the context in which the concept of content management is known. **Content Management is viewed in the context of intranets and websites.** In other words, when one speaks about content management he/she is referring to the content of an intranet and/or website. Growing importance of intranets and websites since 1998 points at the value of CM.

Web content management, is a combination of formal, well defined rules, processes and system architecture, which allows web authors, publishers, end users within the organization, to create, publish and manage all pertinent content of a web page, such as text, graphics, etc. and maintain the integrity of web pages on a decentralized basis. Content Management means effectively collecting, managing and making information available from select publications and can be managed in the following three steps:

a.   The information, which is created or captured, is converted into a master database of format and the information is divided into content components. In a Meta data format using XML or HTML.

b.   In the second step, the content is stored in the form of data base records of files.

c.   To make the content available. It is published in targeted publications like web sites, printable documents, email and newsletters etc.

12.3.2 Significcnae of Content Management :

Website is considered to be the face of a business or an organization. Today website is considered as the best letter of introduction of any organization of the world outside.

All business-to-business, business-to-consumer communication takes place through websites. Websites are the best vehicles of communication with customers, suppliers, governing bodies, partners, investors, employees, research and development related bodies setting standards and specifications etc.

The content on any web becomes out-of-date and hence irrelevant at a very fast rate. The content need to be changed frequently. Content management addresses to this issue. To know how soon the content changes, one should take a look at the websites of Stock Exchanges, News Agencies, Airlines, Hotels etc. Even in a library, the moment a book is checked out, it should reflect in the

website, against that title.

Content mangement is not merely mechanism of updating the website for the outsiders as a part of marketing or PR exercise. Even within an organisation content management helps the users to find the information on a need-based manner in a tailor-made fashion from vast resources like internet and intranet.

Content management, thus functions to cope with changes in the content of the website and to present information in a pre-determined but desirble fashion. This publishing is mostly electronic or print on demand. Thus different pages of the website and any other information collected from elsewhere and presented on demand are all the publishing components of the content management. To further illustrate the concept of content management one need to know some facts about websites in general.

12.3.3 Websites are of Two Types :
1. **Static Websites**
2. **Dynamic Websites**

1.   Static Websites : Static websites, as the name suggests, are not easily amenable or responsive to changes. These sites are difficult to change because text, graphic and multimedia content is stored in different files i.e. HTML pages and not in databases. Attempting to modify a static web page leads to overwritng or corruption or disturbance of page layout or of navigation sections. Above all, only web professionals can modify the content of a static website. This not only causes dependency, but also results in delay of modification itself.

2.   Dynamic Websites : Dynamic websites, on the other hand, are easy to modify or change the content. The concept of dynamic website can be compared with the production of newspapers. The front page layout, where advertisements have to apper, where sports, entertainment and city engagement items have to be presented is decided for once. Day-after-day only the content changes and structure remains same. Similarly, in a dynamic websites format, the text, graphics, audio, video contents can change. In fact, structure and contents are separated. For each publication a seprate structure is considered. The content is stored in a database and web application server is used to generate web pages on demand as per the need.

12.4 Content Management System :

Content Management system (CMS), is essentially software to manage the contents of a web site and facilitate sharing of information, which is crucial to an organization. Web content is a combination of different forms of information, such as text, graphics, pictures, scripts, audio/video files downloadable files like ZIP, TAR, GZ archives. MP3 files etc. Prior to development of computer technology, contents were flowing through ledger books. memoranda, telegrams, circulars etc. among te organizations. As a result of the advancements in the computer technology, intranets and internet have emerged. Content management is done by sharing information using the private computer networks and associated software of intranets and internet as a communication tool. Here content management refers to computer based data management and is primarily centered round web publishing and web technology. CMS software can be considered satisfactory only when it has the capacity of creating, acquiring, saving (in

repository). and retrieving the information on the basis of user need.

Media surface, which is one of the first content mangement applications, was creted in 1996. This allows customers to manage the entire content mangement process right from content creation, its categorization, searching and dynamic delivery. Today, many types of CMS softwares are available with advance features. Some of these are categorized as follows:

    a.   CM-Content Management, which manages the content and web publishing.

    b.   WCM-Web Content Management, which allows collection, storage and publication of content to the web. It also allows the content to break into components for its reuse across multiple online publications.

    c.   DM-Document Management is a special system which allows finding images and media files, with its unique qualities. It allows creating the size and format of the image needed in the publication on the file.

    d.   KM-Knowledge Management refers to standard tools, processes for ensuring that the knowledge in an organization, which can be made accessible through intranet or portal.

    e.   ECM-Enterprise Content Management is like can umbrella, which manages all the content management needs.

12.4.1 Need :

The content is made available on need-based manner through publications such as websites, e-mail, newsletters, printed documents etc. Thus, content management helps to automate and organize the collection, management and publication processes. But before anything we must understand when one should go in for automated content management system.

The following are some of major needs for the development of content management systems.

1.   So long as information was available through books, periodicals, newspapers, office files and minutes of meetings only, life was easy. But, entry of the new media has made it difficult. Quality-wise some content is confirmed hence reliable and the rest unconfirmed, therefore, not much useful.

2.   The content is available in several forms or types. It could be printed word or graphic or phonic in nature. More the types of content, harder it is to manage without a content management system.

3.   Major reason necessitating a content management system is the changes that take place in the content. The changes in content make it complex to manage.

    a.   New components + outdated hence to be deleted or archieved + components need modificatin per week =throughout.

    b.   The changes in the layout, appearance and method of navigational redesign also occur frequently based either on experience or due to feedback or just to break monotony. A good content management system separated the content from design of publication to ensure that you don't have to change the content to match the design.

4.   It prompts the use of content managementsystem in the number of

publications that an organisation is supposed to bring out.

The purpose is to provide a more personalized information product. The number of publication types and level of personalizing give the measure of complexity of the situation and that warrants use of content management system.

In short, number of content components, types of contents, throughout, redesigns, publication and personalization are the six factors that decide the complexity of content management process, and in turn the need to have a content management system.

12.4.2 What Qualities Make the Content Valuable?

Not all information available is conforming to certin qualities. If information is substandard, than the decision based on such material may be wrong and may lead to losses and damage. The following are some of the qualities expected of reliable content.

Accuracy	:	It inspires confidence, reliability.
Timeliness	:	It provides information at right time, as what is the use after the need
Currency	:	It should be up-to-date, covering latest thought, reflecting current research.
Accessibility	:	When you know information is available, but you don't have it on hand. What is the value of such information? It should be accessible.
Engagement	:	It should have capacity to make impact and support decision.
Application	:	It should have relevance to the activity of the organization, applicability and suitability to the context.
Rarity	:	It should provide information unknown till now having competitive edge and cost-effective.

Even if the content in question is of value in some respect or the other, the information available is not 'ready to use' as information is not created for any specific organization's consumption. Primarily, information is generated for some purpose which its creator knows the best. But when it is to be stored in an organization, it should be processed to make it useable. Such processing is referred as value addition. The following are some of the activities that lead to value addition.

12.4.3 Activities Leading to Value Addition:

I. **Pruning**	:	Eliminate the obsolete, irrelevant and inaccurate.
II. **Adding Context**	:	Through summary, analysis, synthesis and relevance.
III. **Enhancing Style**	:	Alteration, adaptation, dramatizing, modifying to suite the user groups such as operators, children.
IV. **Choosing Medium**	:	Internet, overhead or slide presentation, phone call, print.
V. **Customizing**	:	Adapt based on the end users, expressed need.
VI. **Categorization**	:	Categorization simplifies the concepts and help in choosing the most relevant and useful.
VII. **Calculation**	:	Manpower planning appliction of specification etc. Need computing some numerical solution.

VIII. **Correction** : Some errors in information have to be rectified.

IX. **Condensing** : Summarizing, abstracting

X. **Comparison** : Comparing with what is known and familiar

XI. **Consequence** : Knowing the effect of using and not using the information on hand.

XII. **Brain Storming** : Triggering discussion, enhancing participation

These activities bring the idea of content management closer to Librarianship.

12.4.4 Purpose of Content Management System:

An effective content management system helps an organization in acquiring filtering and arranging the data in a systematic way, following some Meta data standards so that it can be retrieved. The process of information sharing becomes valuable only when right type of information is communicated to the right type of user at right time. A Content management application selects the template, adds headers and footers and generates the menus, while preparing web sites. Today, the main function of the internet is to provide the content to its users. If it is to be effective the content is to be regularly updated, since content management system allows visitors to add content, which may create huge content in the web site. Since content management is a system used to manage the content of web site, it contains the following two elements:

a. Content Management Application (CMA) , which allows the author (who may not know HTML) to manage the creation modification and removal of content from a web site without needing the expertise services of a webmaster.

b. Content Delivery Application (CDA), which uses and complies the information to update the web site. The features of a content management system vary but mostly include web-based publishing, format management, revision control, indexing, search and retrieval. It indexes all data of an organization and provides the information on the basis of key word search. Its revision control not only allows updating to newer version but also checks for the changes made to files by individual users.

1. Usage Statistics:

CMS allows comprehensive usage statistics to be gathered including most popular pages daily used, search engines usage etc. This information is very important for tracking the usefulness of the site.

2. Security:

It provides adequate securities levels and audit trials to protec the integrity of the content. .

3. Integration with External Systems:

CMS is one of a number of systems used to present information on the intranet or web net. To achieve integrity, it should be fully documented.

If a company employs an in-house web master, the employees of that company can route all new content to that person, One can deploy content management software and delegate the role to authorized individual at the point, where new content is generated. The web master manages the content, and controls the timing and accuracy of whatever information the employee wants to share with the internal and external audience. Content management system is needed when there is too much of information at hand, and when the information is changing too quickly to be processed by hand.

12.4.5   Advantages of CMS:
The advantages of CMS are:
1.   Faster Dissemination of Information
Books, journals, music, images or pictures, news, graphical and other forms of material can be published on the web by individual authors, institutions and government bodies for fast dissemination of information. Page templates, wizard's etc. help the inexperienced content authors to produce high quality output.
2.   Security Control:
While storing content in a central location, it must be accessible to all. It must provide rights to create, view, change and delete the content to the administrator. During the revision process, changes in the files by individuals should be traced for security. Read and write permissions for components should be provided: major changes to the repository should be checked periodically.
3.   Efficiency:
It allows non-technical users also to make changes to the content or architecture. It is efficient in content repository and provides reusable content, improves site quality and increase customer loyalty. It provides information services environment with integrated system features like E-mail for notifications alerts etc. among all participants in the content production process.
Any content management system starts with a purpose and to fulfill the purpose planning is needed. Content planning involves defining the type of content to be created, acquired and type of publications to be published etc. The system provides the contents through the web sites, printed materials, E-mail newsletters, etc. A content management system is adopted when a large amount of information is to be collected, managed and published by hand.
12.4.6 Content Creation Requirements in CMS:
The following are content creation requirements for CMS:
1.   Integrating Authoring Environment
CMS must provide seamless and powerful environment for content creations. This ensures the authors to have easy access to the full range of features provided by the CMS. Authoring is creating any type of original content. The authors need different types of tools for different types of content, such as word processing for texts, Photoshop, flash, animation, quark, illustrator etc, for pictures and images and for product description the author may use web based forms.
2.   Conversion or Separation of Content:
It is not possible to publish in multiple formats with out a strict separation of contents and presentation. Conversion changes the formatting of the content. In this process the structural as well as the format related codes must be handled. Content must be captured in a structured way, moving away from unstructured information sources to as environment where the content is authored in a more controlled way. (This is tagging structure, which can be done in XML).
3.   Guidelines:
Standards and guidelines are to be used to fit the new content into a system of formatting. Final appearance is controlled by the use of style sheets, which provides flexibility and expandability. The editors use style guidelines for spellings, punctuation, capital use, etc.

4.   Page Templates:
Overall page layout is specified via page template. Therefore, CMS must support a process of continual improvement in interface design.

5.   Metators:
Metators use material guidelines regarding what resolutions are to be used to save images, standard code for HTML in web pages, etc.

12.5 Content Classification and Storage:
The acquired data is analyzed, classified and organized for the repository. If the repository is distributed among databases, one of the databases can be used as the master database, which shall be used for organizing the information in other databases. An effective repository must link content into manageable components and provide flexibility to create, modify and find components. The repository must be able to communicate over the network with a variety of clients. It should be able to communicate with LAN-based and web based, internet based browsers, Internet connectivity; to the repository enables authoring and other publishing process to take place from multiple locations, which is a frequent requirement for today's content intensive web sites.

Meta data is information about information. For example, a piece of data for an article is its author so that meta data helps in locating the information The repository must store all the essential meta information needed to describe the content.

Search Facilities: The importance of content management lies in its retrieval function. The repository must provide read and write access permissions for the components. Content search and retrieval can be done in the following two ways:

a.   Key - word search: Key words are part of Meta data. If the key words exactly match with the key words of the document, then relevant information will be retrieved.

b.   Full text search: In a full text search, all pieces of content in the search words (if the same words appear in text of the document) will be searched.

1.   Content Components:
The components of content can be an article, an image or a graph etc. which have to be organized into manageable chunks according to some standards, so that they can be reusable. Each component in term, made up of several elements, which are smaller pieces of information that make up the component. The elements of a book, for example, are its author, title, place of publication, year of publication. etc. Each of these elements is stored separately in the repository. Content components are linked together to achieve greater results. Most content management systems store components in a relational database, which use XML hierarchies. The effective method of dividing content into components, according to well-defined and universally understood rules does take considerable amount of effort and time of the web programmers.

2.   Data Display Component:
Data display component- usually templates or other pages- onto which the information, which may be in the form of text or image or graph will be printed by the content management site visitors.

3.   Data Administration components:
Data administration components basically HTML forms allow site

administrators to create, edit publish and delete articles in some kind of secure environment.

12.6 Content Publishing:

One of the function of the content management system is to file (or upload) and make the content available to the audience. Content publication in the web world must take into consideration: audience, publication format.

1. Audience:

Every piece of information will have a target audience, but in the case of web publishing. It is essential to analyze and profile the target audience and tailor the content accordingly with the technical ability.

2. Publication format:

The data may be available in any format but it is necessary to covert the data into a suitable form for publication. Electronic documents or scanned paper documents can be formatted into HTML, PDF file type so that they can be shared easily. Format, is the codes used to determine how to visually render information. The content is stored in content files and layout is stored in layout files (i.e. document templates).

3. Structure:

When there are two publications, three structures are needed. One for each publication and one for the content, since base content should not be disturbed by any format. In order to produce more than one publication from the same content base, the content base itself must be structured neutrally, so that the structure of any of the end publications is derivable from the structure of the content base XML is greatly useable for this purpose.

4. Script:

Different scripting languages have been used to create content management systems such as , Perl/CGI, ASP, TCL, JSP, Python and PHP. Each of these languages has its own pros and cons but content management systems that are developed with XML involve the gathering of information that define the basic requirements of the project.

12.7 Relevance to Library and Information Sciences:

These activities of value addition tells us how close these activities are with the concepts of information consolidation, repackaging etc. Thomas Devanport says that the librarians have all the training required to manage information in general and content in particular. This prompts them to think over the following points:

I. Training in information consolidation and repackaging has brought us closer to content management.
II. Knowledge of classification has given that required outlook.
III. Librarianship has always adapted to changes
IV. Librarianship has always played the role of literary detectives; it comes naturally to them.
V. In today's e-business, e-commerce world librarian can reorient with their natural traits.
VI. It is qualitatively one of the top-ten professions in the US, and librarians can improve the ranking by mastering content management.
VII. They can really play a good role in nation building in economic and

cultural sense.

12.8 Summary:

Content creation and content packing was mainly confined to printing and publishing industry till early nineties. The mid nineties saw inter-mixing or print medium, databases and telecommunication leading to advent of electronic and the content industry. It has further necessitated developing content management techniques leading to designing of content management systems.

The content management system helps to organize and automate collection, management and publishing processes. Since the field of content management system is new, no universally accepted standards are there as regards what content management systems are or how they should be. Most of the content management software available today is prepared by webmasters, who are trying to tackle with the explosive growth or the content of their own web site Most of the content management systems have started setting up rules as to which areas of a web site would be managed by whom within an organization Ability to work within any web-based environment such as internet, internet or intranet (web site available to employees. customers, vendors etc.) is a very important consideration in the development of CMS software.

12.9 Self-Check Exercises

1. What is Content Creation?
2. Discuss variety or types of contents.
3. What is Content Management System?
4. Discuss qualities of CMS.
5. Enumerate advantages of CMS.

12.10 Answers to Self Check Exercises

1. See Section 12.2
2. See Section 12.2.3
3. See Section 12.4
4. See Section 12.4.2
5. See Section 12.4.5

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METHODOLOGY FOR PREPARATION OF HANDBOOKS, NEWSLETTERS AND STATE-OF-THE-ART REPORTS.

Structure

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13.0 Objective

After studying this lesson you will be able to understand:
1)   Information Consolidation products and their types;·
2)   Need, purpose and Methodology of preparation of Hand books;
3)   News letters; and,
4)   State- of- the- art- reports.

13.1 Introduction

Information Consolidation is a technique in which Information products are prepared after evaluating. analyzing, synthesizing, restructuring, packaging and repackaging information from already existing suitable and reliable information sources. This lesson deals with same information consolidation products, such as handbooks, newsletters and state-of-the art reports.

A Handbook is a compilation of miscellaneous information in a compact and handy form. It may contain data, principles, tables, graphs, diagrams, logarithmic

tables etc. A handbook is a form of information products which treats subjects in brief form. It may include odd bits of information about a variety of topics.

News letters are another form of information products which are published by specific organization and institution to keep their user groups informed about the activities and future projections etc. The newsletters cover various news items and technical aspects of organization and are normally freely distributed among those who are interested in the subject area. While some newsletters are intended for employees others are meant for external public.

State-of-the-art reports fall in the category of reviews. Their basic feature is that they emphasize recency and up-to-datedness. The principle objective of this category of information products is to describe very recent situation. Thus, the state- of- the art reports are more timely than the traditional class of reviews. In short we may say that state-of -the art reports serve more as current awareness tools. There are generally prepared for specific target group on demand and are marketed at high prices.

13.2 Information Consolidation Products

The term information analysis and consolidation is very recent. Broadly speaking information analysis and consolidation activities include selection, evaluation, analysis, interpretation and synthesis of a body of information in a clearly defined specialized field with the intention of compiling, digesting, repackaging or otherwise organizing and presenting, pertinent information in form most authoritative, timely and useful to the different requirements of the different category of users.

Information is analyzed and synthesized for use in products and services for dissemination to users. It is pertinent to mention here that mere possession of information is not a guarantee of its use. UNESCO has done commendable work in the direction of promoting information use, particularly in the developing world.

13.2.0 Objectives

Some significant objectives of information consolidation may be summarized as under:

a)   To ensure effectiveness of information transfer;

b)   To promote effective use of information in a variety of developmental activities: and.

c)   To fulfil information requirements for evaluated and synthesized information of potential users.

Information products broadly include information provided in either electronic or printed form. Information Consolidation products may be a by-product from the work done for producing other information products or services.

13.2.1 Types of Information Products

Keeping in view the information needs of users appropriate information products are prepared. Following types of information consolidation products have emerged to fulfill variety of information requirements of users:

1.   Reviews - critical reviews and state-of-the-art reports.
2.   Reports - technical reports, marketing reports, alerting bulletins, newsletters and house journals
3.   Data - data compilations, statistical abstracts, correlations, critical data and composites.

4.   Databases - expert databases and subject knowledge databases
5.   Technical writings - guides, manuals, instruction sheets, popular science articles and instruction sheets
6.   Compilations - Handbooks and manuals
7.   Critical studies - comparison of studies, impact and future studies.
8.   Requests - briefings, evaluative on-demand studies and compilations

In the following sections we shall discuss Three information consolidation products namely handbooks, newsletter and state-of-the-art reports. The preparation of each type of information product is quite different from the other as far as criteria and procedure of their preparation is concerned.

13.3 Hand Books

The word 'handbook' is believed to have been derived from the German 'handbuch', and was first introduced in the 19th century. Handbook is said to be a small book or treatise, and as may conveniently be held in hand. Shores defines a handbook as "a reference book of miscellaneous facts and figures on one or many subjects assembled for ready use, in response to popular interest or to a specific need for concise, handy information."

Dictionary meaning of a handbook is, "A small book or treatise such as may conveniently be held in hand. It is a compendious book or treatise for guidance in any art, occupation or study".

Handbook supplies answers to specific questions such as statistics, rules, wording of quotations etc., in the quickest possible time. Handbook provides in a brief form the established knowledge in a particular area.

Handbooks are the best working tools for the technologist, engineer and scientist. They usually contain factual information, data, table, formulas etc. They are designed to meat what is called 'every day approach' .Most of the handbooks are single volume for easy handling. Handbooks are compiled by specialists in the field.

13.3.1 Importance

Due to tremendous information explosion in all the fields, particularly in the areas of science and technology and proliferation of literature; the present century has witnessed the compilation of a large number of handbooks on science and technology subjects. A student or a teacher can get the information on specific topic or even in specialized fields of knowledge with the help of such handbook where information is organized systematically.

Hand book gives minute or depth information on a narrow subject area with scientific precision and terminology. Handbooks are sometimes published with misleading titles such as 'Guide', 'Dictionary', or 'Encyclopedia'.

13.3.2 Purpose

The handbooks are prepared with a purpose to some as ready reference sources in any field of knowledge. It does emphasize the established knowledge rather than the recent developments in a given field. These sources primarily give information about 'how to do', 'how to perform', 'how to make', etc. i.e. these consist of facts to know and 'instructions to do'.

13.3.3 Types

Some of the types of Handbooks and Manuals are:

1.   General handbooks
2.   Statistical handbooks
3.   Historical handbooks
4.   Literary handbooks
5.   Official handbooks
6.   Tables
7.   Practical handbooks
8.   Subject handbooks

13.3.4 Methodology for Preparation of Handbooks

The following steps are followed while preparing a handbook.

1.   Careful examination of information to be conveyed.
2.   Reader Analysis, i.e., who the users are likely to be
3.   Decide how best to convey information

These three steps help to determine the scope and style of writing of the handbook. Technique of presentation of information in the handbook should be simple and easy to read even if the information to be conveyed is complex.

Keeping in view the above steps methodology for preparing handbook may be organized as follows:

13.3.4.1   Information Collection
13.3.4.2   Anatomy of the handbook
13.3.4.3   Style of Presentation
13.3.4.4   Issues relating production

13.3.4.1   Information Collection

Information collection for inclusion in the handbook is a significant activity. It desires competence, knowledge and experience of the author of the handbook, as the handbook should be prepared by only those persons who have the knowledge of the subject area. The author should judiciously scan the vast amount of literature available on the subject to bring out very much relevant, authentic and up-.to-date information.

Besides formal documentary sources, reports, letters, notes in files, descriptions, etc. may be scanned.

The collected pieces of information should be analyzed and consolidated in presentable form: The consolidation process should be done keeping in view the requirements of users.

13.3.4.2 Anatomy of the Handbook

Presentation of reading material on each and every page should be able to convey the message of its utility to those, for whom it is prepared.

Generally handbook has got following parts:

1. Preliminary information: This includes title, table of contents, list of illustrations used in the text, list of tables provided in the text and general introduction. Introduction should be written very carefully as it indicates the purpose and defines the scope of the handbook. It also explains meanings of abbreviations, symbols or technical terms used. It should also include edition statement, if needed, to give information about addition or deletion of material in the new edition. Introduction should also explain subject under consideration, its scope, historical perspective and the likely users of the handbook.

2. Textual Presentation: Sucbject matter appears in the body of the handbook in a classified manner including logical arangement of various contents in parts, chapters' sections and subsections depending on the nature and size of the handbook. Textual material should include details of historical perspective, coverage, methodology, literature consulted, results and findings and conclusions:

3. End Products : Information supplied in the last pages is usually very important, as it helps in finding relevant information from the text expeditiously In addition to the index of bits of items included in the· text, it also appends list of references, glossary of technical terms and other relevant material like extracts of reports, patents, standards etc.

List of "references'' provide vital clue to the published and unpublished material which may be consulted by users for detailed study of topics discussed:in the text. Citations should be with full bibliographical details and in proper order with reference numbers. It may be still more appropriate if the references are.also given in the form of detailed bibliography at the end. List of technital terms. or words used in the text in special sense may also be provided in the end. Index helps the readers to locate a topic or subtopic or any other material discussed in the handbook easily. Entries in the index are generally arranged in alphabetical order ahd also include cross referencnes wherever required. Against each entry page numbers on which particular information is available are mentioned.

13.3.4.3 Style of Presentation

A peculiar style should be followed to arrange the lists of information in the handbook. Once the style is finalized we need to know what to select and how to arrange the selected material. Extensive use of illustrations and tables is required in a handbook. A suitable balance between the natural language expression and graphic language has to be maintained throughout the text.

The text should be written in simple, concrete and specific language. Use of flowery language and jargons should be avoided. There should be consistency in the use of terminology, abbreviations and symbols. Basically three kinds of expository writing is desired in handbook. These kinds are persuasive, informative and explanatory.

13.3.4.3 Issues Relating Production

Mode of Production to be adopted for handbook is of paramount importance. Beside this number of copies to be printed has also to be considered. Handbook should be handy as it has to be frequently used. It should be easy to revise as frequent changes in data need up-dateness in near future. It should be kept up-to-date as users generally need specific details for their work.

13.3.4.5 Examples of Handbooks

1.   Charles D. Hodgeman, Handbook of Chemistry and Physics. Ed 58. Cleveland. the Chemical Rubber Company. 1977

It was first published in 1981. It is a reliable ready reference book of chemical and Physical data in condensed form providing reliable and accurate information.

2.   R.E. Bolz and G.L. Tue, Ed, Handbook of tables for applied Engineering science, 22nd ed. Florida Press, 1995

13.4 Newsletters

Accelerated growth of informatjon accompanied by increasing rate of

obsolescence has necessitated the need for information consolidation and repackaging to keep users well informed with developments in their respective areas of specialization. Due to this difficult situation, various information consolidation products and service are being generated. One such information consolidation product- (ICP) was the 'Newsletter' which presented information in a precise and concise manner keeping in view differential requirements of different category of users.

13.4.1 Definition

Newsletters are a form of periodic publication issued by institutions, organizations or professional societies for providing very relevant information for a group of target users.

According to Seetharama, Newsletter is defined "as a serial consisting of one or few pages, usually printed, consisting nascent information or news which is of interest to a special or particular group of users and which is published periodically." Newsletter usually carry consolidated information on subject areas or topics which otherwise is quite scattered. These being simple in format and crisp in style, are relatively easy, fast and inexpensive to produce. The frequency of newsletter varies and they can be weekly, fortnightly, monthly, bi-monthly, quarterly, half-yearly or annual. These are usually publications having limited pages, about four to eight, supplemented with a few photographs and illustrations. Newsletters generally include scientific data, details of prominent personnel of an organization, lists of materials both published and electronic. They also include book reviews, information about forthcoming events, conferences, seminars etc, and details of training programmers to be conducted in near future and also include news items concerning new persons joining the organization, retirements, obituary, social and cultural events, exhibitions, etc.

13.4.2   Functions

1. Publicity Material: Newsletter is a type of publicity material which provides vital information about current events, activities, publications, research studies, products, designs, employment news, etc. to the concerned users.

2. Information Provider: It provides information to academic and research, staff about forthcoming conferences, seminars, symposia meetings etc. to facilitate their participation. Newsletter is termed the best source for consolidating and disseminating such information.

3. Current Activities: Newsletter attempts to publish relevant current activities of parent organization or institutes relating to persons associated with it for their benefit.

4. Social and Cultural Activities: It brings to the notice of user population news and views about social and cultural activities of their interest. It also attempt to carry personnel information like fresh appointments, transfers, promotion, retirements, marriages, births etc.

5. Miscelleous Information: Other such information which is not covered in above categories, but have direct concern with the user group also find place in Newsletters.

13.4.3 Need

Newsletter attempts to provide micro level information, news and views regarding managerial, organizational and personnel matters of the institution, society, corporate body or association, which publishes it. So there is need to publish Newsletter as the same is the best source to provide information, news

and views about various activities of the parent body.

13.4.4   Types of Newsletter

According to seetharama Newsletters may be classified into different types based on the type of sponsoring organization.

a. Government organizations
b. Non-Government organizations
c. Associations
d. R & D Institutions
e. Autonomous Institutions
f. Private Institutions
g. International organizations, etc.

13.4.5 Methodology for Preparation of Newsletters

The following steps may be followed for preparation of Newsletter.

1. Determining User Needs: As stated earlier newsletter is published to serve a specific segment of users. So it is necessary that needs of users and their information requirements may be studied, so that the same may reflect in the ultimate product.

2. Scope: Keeping in view the user needs Newsletter should include programmes, policies of the sponsoring body. It should also report personnel matters like promotions, transfers, retirements etc for the benefit of its users. It may also report forthcoming events like seminars, conferences, etc for the benefit of its employees.

3. Collection of Information : After determining the scope next step is collection of facts and figures to be included in the Newsletter. Generally main source of information for Newsletters executive orders and decisions taken by. the concerned organizations for their growth and development so executive orders and personal information regarding appointments, promotions, transfers etc. supplied by individual in the written foam act as chief some for information gathering. Some Autoclaved professional journals, specialized technical reports, patents, standards etc are also used for this purpose.

4. Analysis of Information : Information collected for inclusion in the newsletter must be analyzed for its authenticity. Care should be taken to include only authenticity information.

5. Style of Presentation : Style of presentation of information in the Newsletter should be one to help users in making use of it. If possible location of types of information in the present and forthcoming newsletters should be fixed so that users may turn up to the same page or column for a' particular type of information.

6. Physical Production: Newsletter should look attractive in its final shope so that concerned users may be tempted to study it. It has been realized that Newsletters and other products having poor physical outlook fail to attract users, although they may be carrying very useful item of information.

13.5 State-of-the-Art Reports

State-of-the-art reports are a kind of reviews which concentrate on presenting very recent and up to date material on a particular topic or subject group. These are considered as current awareness tools, as they specifically take care to provide

latest information on current topics.

The state-of-art reports are generally prepared on technological topics and in the fields of business and commerce. These are prepared on demand for specific group of users and are generally highly priced.

13.5.1 Features of state-of -the-art Reports

1. Exhaustive: as far as possible state-of-art reports try to include latest developments in the field.

2. Context Oriented: State-of-the-art reports are prepared keeping in view the context in which the current literature under review is desired by the users. In other words it involves purpose, subject orientation and the degree of appropriateness in relation to both, i.e. a given subject and a given user group.

3. Thoroughness: It attempts to be as up-to-date as possible, so far as the scope of the subject is concerned

4. Literature Survey: It attempts to scan all lesson sources of information on the given topic.

5.   Utility: State-of-art reports being prepared on demand and for a target group of users attain a high degree of utility.

13.5.2 Functions of state-of-the-art Reports

The functions of the state-of-the-art reports may be stated as below.

1. Consolidation and Repackaging of Information from Different Sources :

It consolidates information from different sources on the given topic and repackages the same for further use.

2. Extraction of Quality Material: State-of-the-art reports manage to extract quality material after reviewing all the existing material on a particular subject. Experts on the subject are involved to do this job.

3. Identification of Emerging Trends of Research in a Particular Field: While reviewing the existing literature on a subject, state-of-the-art reports points out emerging trends of research in that subject. In this way state-of-the-art report not only reviews the current state of affairs going on in a particular subject area, but also forecast future trends in research and development in the near future.

13.5.3   Methodology for Preparation of State-of-the-art Report

As stated else where state·of-the-art reports are a kind of consolidation products created to suit the instant need of users to promote their professional or industrial requirements. So methodology of preparation of state-of-the-art reports is quite similar to other consolidation products.

Like other consolidation products such as Newsletters, the state-of-the-art reports include the following steps.

13.5.3.1 Users Needs:

Before starting work on state-of-the-art report, it is desirable to study target user population who will ultimately be benefited with the report. If the user community belong to some engineering industry and seek latest technical know how on production then the state-of-the-art report must focus on this aspect. In short user needs should guide the making of the state-of- the-art reports.

13.5.3.2 Scope: .

Scope of the state-of-the-art report is determined after carefully understanding the user needs. Normally state-of-the-art report should review the latest trends, progress and developments in the subject area under consideration.

13.5.3.3 Information Search:

Since state-of-the-art reports generally concentrate on micro aspects of the issues pertaining producers and consumers, so selection of material is done from a variety of primary and secondary sources relating to the subject: Normally primary sources like patents, standards, research, reports and articles in research journals are consulted to produce reports of high technical order.

13.5.3.4 Analysis of Information:

An eminent subject expert or a team of subject experts should be entrusted the job of analyzing the already gathered information on the subject. E'very care should be taken to analyze and consolidate information.

13.5.3.5 Style of Presentation:

Every care should be taken to present the material in a simple and easy to understand method. Use of tables, diagrams and illustrations should be applied to make the subject more understandable wherever needed.

13.5.3.6 Final Draft:

Final draft should be approved after carefully incorporating views of authors and experts working on specific aspects of the subject area under review. It should also be ensured that views of authors incorporated in, the final draft are duely recognized. A list of further readings may be included in the end for further study by users.

13.5.3.7 Physical Production:

The consolidated end product of the state-of-the-art report should have a presentable form, so that the concerned user may get benefited from the report.· Good quality paper, fine binding, attractive cover title, illustrations, diagrams etc make physical out look presentable and worthy of use.

13.6 Summary

Three types of information consolidation products-handbooks, newsletters and state~of-the-art reports have been discussed in the lesson in detail. Hand books treat information products in the form of subjects in brief and explain issues pertaining the subject area with the help of data, tables, graphs, diagrams, logarithmic tables, etc.

Newsletter is another kind of information products which is published by an organization, institution, association· or society to supply information regarding its activities and programmers. It also reports general information like promotions, transfers, retirements, social and cultural activities directly relating to the users of the Newsletters.

State-of-the-art report is another form of information products which exclusively reviews the current state of affairs on a particular subject or subject group. Methodology for preparation and other aspects of the three forms of information products have been discussed at appropriate places in the lesson

13.7 Self-Check Exercises

a. Define Newsletter and discuss methodology for preparation of newsletter.
b. Discuss features of state-of-the-art reports.
c. Discuss methodology for preparation of Handbooks.
d. Enumerate various types of information products.
e. Do you think Newsletter is information product? Discuss how?

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LESSON No. 2.6   **AUTHOR : DR. JASMER SINGH**

ABSTRACTING: TYPES AND GUIDELINES FOR PREPARING ABSTRACTS.

Structure

14.0   Objectives

After reading this lesson you would be able to have fair knowledge of:
1)   Stages of abstracting and parts of Abstracts
2)   Guidelines for writing abstracts ; and,
3)   Qualities, uses and problems of abstracts.

14.1   Introduction

Abstracting was conceived as the most important 'public palliative' to cope up with the rising tide of new forms of documents, during the nineteenth century. Since then, abstracting services have become available and are accepted by information seekers in almost every discipline and specialization. Abstracting is an intellectual and skillful work. Even so, some of the aspects of the work can be formalized and explained to persons intending to take up abstracting work. Abstracting services may have their own policy which is reflected in the abstracts prepared by them. Today there are more than 2000 indexing and abstracting services throughout the world in almost all major disciplines.

14.2   Parts of an Abstract : Abstract has two main Parts as given before.

14.2.1   Citation
14.2.2   Abstract proper

14.2.1   Citation

The citation is of the document which is abstracted. The document may be an article in a periodical, a book or monograph, a patent, a standard, a paper in a conference proceedings, etc. The abstractor should describe the document, in the citation, in such a way that it becomes possible for the reader to identify and locate the document easily. The major abstracting services, however, have established their own style and standard in this matter. Continuous efforts are being to formulate a widely acceptable standard system of citation. A number of standards have also been formulated. There are ISO Recommendation, British and Indian standards on this subject. A library or a documentation unit contemplating to start an abstracting bulletin would do well to follow one of these standards. In spite of this varying practice of citation, there appears to be a high degree of uniformity as to the items of information that are necessary in citing a document in an abstracting bulletin.

14.2.2   Abstract Proper

Second part represents abstract proper. Complete standardization is not possible in this part. But certain rules and guiding principles, when followed by the abstractor, could make his product more acceptable to readers.

Abstractor must have knowledge about his audience. Such information would substantially affect his product. For, the abstract should have an orientation according to the requirements of the audience. If he is preparing the abstract for a bulletin which is being issued for the benefit of research workers within an institution, the abstract will need an orientation which may be completely different from an orientation needed when the bulletin is addressed to the top management of the same institution. In the latter case the abstract may have to highlight the significance or the possible areas of application methods and experiments described elaborately in it.

14.3   Stages of Abstracting

14.3.1   The First Stage

It desires that the abstract should reveal the essential features of the original article or work, indicating new observations and any conclusions drawn from them. This requires, on the part of the abstractor, ability to identify the key facts in the documents. A general guidance that can be given for this identification of key facts, which is the first stage of abstracting, is as follows:

1.   The introductory portion of the paper or document should be read carefully. This portion usually indicates the objective of the author in writing the paper or gives the general perspective of the study being reported.

2.   If the document contains an author's abstract it should be read and examined in the light of the information contained in the text.

3.   The summary and conclusion usually given at the end of the document should be read. They may indicate the author's findings and should form part of the abstract.

4.   The text should then be scanned for information on the methodology of the work, data and any other additional information.

14.3.2   The Second Stage

The second stage of abstracting work is to organize the ideas that have

been selected to be included in the abstract, in a sequence likely to be most helpful to the reader. The sequence of these ideas or the structure of the abstract could more or less, be as follows:

1. **Purpose :-** The introductory statement should indicate the goals, objectives and aims of the study or reasons why the paper or the document was written.
2. **Methodology, techniques, and instruments :-** The technique used in attaining the stated objectives should be included next.
3. **Results :-** A statement of the findings reported by the author should come next.
4. **Conclusion :-** A statement dealing with the interpretations or significance of the result may be included at the end.
5. In certain subject fields, the abstract may contain specialized information. For example, in the clinical trial of drugs it is helpful to state the size of the control sample in the trial; whether human or animal, what percentage reached, etc. Similarly, in biology it is necessary to give information regarding new taxa, new distribution records, etc.

14.3.3   The Third Stage

The third stage in abstracting, after the key facts have been identified and the ideas organized is to write the abstract in an accurate and precise manner.

14.4   Types of Abstracts

14.4.1   Indicative Abstract

This type of an abstract is simply an outline of the original document presented in passive voice present tense, discusses the article, which describes the research. It summarizes the contents, indicates the scope and content of the documents and enable the readers to decide whether or not he should read the original document. This kind of abstract cannot serve as a substitute for the original article. It provides useful current awareness service.

14.4.2   Informative Abstract

This type of abstract usually contains scope, purpose, methods used, kind of treatment, results or findings, conclusion, or interpretation of the results obtained by the author. Informative abstract is more popular and more useful as well as more important than indicative abstract. However indicative abstract is shorter and economical but specialists usually prefer informative abstracts. On the basis of informative abstract, a reader can decide whether or not the given contribution is a basic and primary one.

14.4.3   Critical Abstract

It not only describes the content but also evaluates the work and its presentation. It normally indicates the depth and extent of the work commenting on the adequacy of experimentation and survey methodology significance of the contribution made.

14.4.4   Pseud Abstract

It is traditional type identified by T.E.R. Singer. The pseud abstract is described as an abstract of a paper that has not yet been, and may never be written. It originates from the practice of inviting speakers before professional associations to submit abstracts of their papers for publication prior to delivery of their papers.

14.4.5   Slant Abstract

Documents are often found to have contained information of multidisciplinary character. In such cases where the contents of the same document have to be dissemi-

nated to serve the interest of scientists and technologists belonging to different disciplines one or the same abstract cannot do the job. It has to be slanted by changing the focus oriented to specific needs or discipline. Emphasis on methodology and equipment are more important in a slanted abstract.

14.4.6 Telegraphic Abstract

It is a detailed index to a graphic index. It consists of:

a) Significant words selected from the documents;

b) Role indicators which supply a context for the selected symbols which separate and group the words and role indicators into various units. It is also called encoded or standardized abstracts.

14.4.7 Auto Abstract

It is based on the idea given by H.P. Luhn of IBM. The process consists of the use of a computer to extract abstract from the text of the document. Sentences from the document are selected for inclusion in the abstract on the basis of the number of keywords they contain. The keywords for particular document are determined statistically by the frequency of their appearance in the text, by their appearance in the title and headings, and by their position e.g. words in the first sentence of a paragraph are generally of some what special significance in the document. The computer then traces the sentences in which those high frequency words appear and put them in a sequence that produces auto-abstract which in true sense is a collection of the most informative sentences from the original document.

The Luhn process is founded on two main principles: Word occurrence and Word proximity. Word occurrence assumes that items of importance in the text which are stressed by the author through his repetitive use of certain words. Word proximity assumes that the physical nearness of words to each other in sentences is indicative of the close intellectual association of the ideas they represent.

Generally speaking, the steps followed in producing an auto-abstract under Luhn's programme are explained by Becker and Hayes as under:

1. The machine programme separates the text in a way which ensures that words and sentences are identifiable and available for subsequent processing on call.

2. A table lookup compares each word with those common words which rarely characterize meaning in English sentences. Such as the conjunctives, articles, and prepositions, and causes them to be deleted.

3. The remaining notion words (i.e. verbs, nouns, adjectives, etc.) are then sorted alphabetically so that the total occurrences of each can be tabulated.

4. A number of statistical calculations follow :

   a) Grouping of words having the same stem-to ensure that variations of the word will still be treated as one occurrence.

   b) Tabulating the number of words at each frequency.

   c) Determining the number of words in a sentence and the average word frequency.

5. High frequency words are then traced back to their original sentences and their position noted.

6. Proximity rules determine which, high frequency words are "bracketed" within a given sentence.

7. Finally, the sentence is assigned a value corresponding to the square of

the number of high frequency noncom on words within bracketed sections. After all sentences are assigned a value, they are ranked and the highest ones selected for the auto-abstract.

It is evident that abstracting and indexing services have made much headway in science and technology. But abstracting services in humanities, social sciences and fine arts are still for behind in number and scope, not because of neglect but because of the theory of knowledge and fundamental concepts on which they rest, and which has undergone little changes.

14.5 Guidelines for Writing Abstract

Some important hints for preparing an abstract are given here:

1. The form, content, and length of an abstract should depend upon the type of document which it is representing.
2. The abstract should depict the general form of the original.
3. The abstract should not reproduce the title nor should it only be a listing of the subjects or topics discussed in the original but should indicate what the original says about those subjects or topics. It should emphasize early in the abstract what is novel about the information contained in the original.
4. Complete but short sentences should be used.
5. Redundancy should be avoided.
6. The use of abbreviations, symbols, and contractions should be confined to those commonly accepted.
7. Original terms, or symbols should be accompanied by an explanation.
8. Original drawings, diagrams, tables, charts, or other graphic contained in the original should be referred in the abstract.
9. References to other work should be kept to a minimum and should be included only if they are essential to display the author's message.
10. It is not possible to prescribe a formula for the length of an abstract; however, the typical range would be from 75 to 300 words. Experimental research abstracts, for example would average 200 words.
11. An abstract should usually start with the title of an article, using bold faces when in printed form followed by the name of the author, name of the host documents, volume number, date, pagination. The citation should be prepared in such a way that it becomes easy for the user to identify, evaluate and locate the document.
12. The abstractor should be in continuous touch with the research work in progress. It will enable him to prepare abstracts keeping in view the requirements of the audience.

14.6 Criteria for Preparing Abstracts

The following accepted criteria may be followed for an ideal abstract:

1. **Purpose :-** A statement of the goals, objectives and the aims of the research or reasons why the article was written. This statement should be included in both the informative and indicative abstracts.

2. **Method :-**A statement about the experimental techniques used or the means by which the previously stated purpose was to be achieved. If the techniques are original or unusual or if the abstract is informative, more details should be included.

3. **Results:-** A statement of the findings. The informative abstract tends to be more quantitative than the descriptive abstract.

    4.   **Conclusion:-** A statement dealing with the interpretation or significance of the results.

    5.   **Specialized Content:-** Certain subject matter fields require that the abstracts contain specialized information. Medical journals e.g. require that the abstract should contain details of diagnosis and treatment, drug dosages, etc. where applicable. In writing or evaluating abstracts in those fields, the specialized requirements must be considered. The abstract is to be brief (100-200) and non-repetitive.

    6.   **Form:-** More variation is possible in the form of the abstract. There fore, form criteria must be applied judiciously and cautiously. The major criteria are clarity of content and conciseness of expression.

14.7 Qualities of a Good Abstract

Qualities of abstracts and their publications vary greatly.

1. One of the serious defects in abstract publications is the total omission of certain publications which in the Judgment of the abstractor/editor are of less significance. Often entire classes of documents are omitted for reasons of security and other reasons. Proper Judgment of articles to be abstracted improves the utility of an abstracting service.

2. An abstract should be comprehensive and make available all the needed information in clear, accurate and precise manner.

3. All abstracts should be consistent in presentation.

4. It should highlight all the outstanding features and date.

5. Perhaps the most frequently emphasized quality of abstracts is brevity. This factor can be measured by re-editing the published abstracts and comparing length before and later. Abstracts that are too brief are likely to it important information.

6. Abstractor's criticism should be avoided.

7. Reliability of abstract, as indicated by consistency in following rules is another measure of quality. Such reliability requires through knowledge of techniques.

8. Promptness in the publication of abstracts is often measured by the time elapsed between the appearance of original article and of the abstract to it. The potential effects of delay in agriculture, medicine, and weaponry may be spectacular. In all fields delays cause economic loss. Delays may amount to several months to a year. Some organization prides themselves on delays of only one month. Abstracts prepared from the page proof of articles in journals may appear before the articles. Abstracting from page proof, is subject to the hazard of cancellation of the original article in proof.

9. There should be an index. Lack of proper index greatly hampers its use, especially for retrospective searching. Indexes, whether stored in a computer or book form increase the accesses to abstracts. The most common forms of indexes are to subjects and authors in certain fields like formula, ring, etc.

10. The price of the abstracting journal is a quality factor too. High price limits access to abstracts.

11. The authoritativeness of abstract is another quality. It is related to the reputation of the abstract journal which, in turn, is a product of the care with which abstracts are prepared, edited, checked, and printed. Abstractors recognized as authorities in the field also increase the authoritativeness of

abstract. Section editors, who oversee quality, lend authoritativeness.

12. The classification system (including sub-classification) used for the abstract is a factor in quality. The appropriateness of the system to current keys is relevant. Classification systems become obsolete if not given continuing attention. Changes that are too frequent may confuse the user and make the process of classifying abstracts more costly.

    Categorization, the process of placing abstracts into the structure of classification system adopted, is another factor affecting quality. Uniformity in categorization requires training definition of the categories.

13. The formats of abstracts affect their usefulness. There is evidence to show that abstracts with carefully selected lead-in -sentence and with the reference to the original article at the end are preferred to abstracts starting with the title of other party of reference. Other items of format, including a standard order for components of the body of the abstract, are also factors to be considered.

14. There is evidence to show that the kind of type face used affects the case of reading and legibility. Printing giveswide choice in this matter and computer outputs are beginning to have this variety also.

15. Economics: The cost of classified, published, indexed abstracts varies considerably. The cost per abstract can be obtained by dividing the budget of the service, including research expenditures, by the number of different abstracts published.

    Indexing costs may amount to more than half of the cost of publishing classified abstracts. For example, for Chemical Abstracts, indexing cost includes salaries of subject-authority indexers who have received extensive training in indexing.

    The cost per abstract impression is obtained by dividing the cost per abstract by the circulation. For the above example, the cost per abstract impression has been near two-tenths of a cent.

16. An abstract should also include negative results.

17. It should be written in third person.

18. The time lag between the publication of the journal should be minimum possible.

19. Conclusion: However long the abstract, care should be taken to avoid in particular all expressions or circumlocutions that can be replaced by single words, but this should not be done at the expense of precision.

20. Precision: The description must not be emptied of all meaning by the systematic use of very general terms and sentences which doubtless succeed in condensing the original text but could as easily apply to another. One should therefore use expressions that are as exact and specific as possible without exceeding the requested length.

21. Self-sufficiency: The description of the document should be complete in itself, fully understandable and not require reference to any other document.

22. Objectivity: There must be no personal interpretation or value judgment on the part of the person producing the abstract. The primary document must be described such as it is, bearing user needs in mind. In the case of a critical abstract, the factors in which the judgment is based should be

made explicit.

The worst fault of an abstract is to be without substance, in other words to be a mere paraphrase of the title or, in the case of informative abstracts, to be composed to all-purpose sentences like. The author describes the methodology and results of a study on the use of low temperatures to preserve fruit.

Abstracting is an intellectual and skilful work. Even so, some of the aspects of the work can be formalized and explained to persons intending to take up abstracting work. Abstracting services may have their own policy which is reflected in the abstracts prepared by them. We are considering here only some of the ground rules applicable in most cases and which can provide only the general, but useful, guidance to the abstractor for preparing good abstracts.

14.8 Uses

Uses of an abstract are enumerated as follows:
1)   It helps in keeping one up-to-date with new knowledge.
2)   It indicates, whether the article is of value to him or not. Thus he need not search unnecessarily and waste his time.
3)   It serves as a rapid survey of retrospective literature.
4)   It helps the user to overcome the language barrier to some extent because the abstract of an article in a language not known to him can be made available in a langrage he knows.
5)   It helps in improving indexing.
6)   Classified abstracts bring together material on the same subjects, which may otherwise be found scattered in a journaland elsewhere.
7)   An informative abstract, sometimes can serve as a substitute to the original document.
8)   It assists in writing reviews.
9)   It enables one to make a retrospective search for literature in a field.

14.9 Problems of Abstracts

1.   Unwanted Abstracts

One problem is concerned with bringing to the user only those abstracts of greatest potential concerned to him. It is problem in raising the relevance percentage. It is obvious that most of the unwanted abstracts of the papers that he would have no time to read need not be brought to his attention. How does one select from the 200,000 abstracts of chemical papers per year only those abstracts that should be brought to the attention of each chemist?

2.   Pricing

The pricing of an abstracting service for survival with quality is a problem that remains unsolved. It is related to the problem of repackaging. Logically it would seem desirable to include most of the cost of an abstract service in the cost of research and development, in line with the belief that communication of research results is a part of research. However, the technique or will for doing this has not been established so far. The support of abstract services by their users is possible if the number of abstracts supplied to them is within their range of interests (the repackaging problem) and if there are enough users, which becomes a part of the pricing problem. Subsidy by societies, industry, government and advertising has been tried.

3. Time Gap

Another serious problem is the time gap between appearance of the original and the indexed abstract. The life of an abstracting service is a continuing battle against delays.

4. Quality Control

Quality Control for indexed abstracts is likely a problem of bringing understanding and an appreciation of quality. Many of the qualities of abstracts and indexes are invisible to the user, who is generally able to detect omission only of his own papers. Qualities other than omission may be equally difficult to detect and appreciate. Quality control being the continuing problem of justifying its expense to those who may not appreciate its necessity. Measures and measurements of the various quality factors are needed. Many of these factors exist independently of the users, although all of them affect the users.

5. Effective use

The stimulation of the effective use of abstracts by those who could benefit from their increased use is a problem that seems amenable to formal and continuing education. Techniques for effective use need improvement, additions and development-as well as teaching. There is evidence that features built into existing abstract services are now known, appreciated, or used as effectively as they might be. Such features include translation services, access to original documents, cross reference to related documents and abstracts, nomenclature information, lists of abbreviations, special indexes and lists of periodicals.

14.10 Summary

Abstracting is an additional assistance to users which helps to apprise them of the contents of documents even at the point of access. Abstract have two main parts - citation and the abstract proper. Abstracting is done in three stages. Indicative and informative abstracts are two main types of a abstracts. Various guidelines for preparing abstracts are provided in the lesson. A criterion for preparing abstracts has also been discussed. Qualities of a good abstract and uses also find place in the lesson.

14.11 Self Check Exercise

1. Discuss the various types of Abstracts.
2. Elaborate the various stages in Abstracting
3. Discuss the qualities of a good Abstract.
4. Discuss Guidelines for writing Abstracts.

14.12 References

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LESSON No. 2.7   AUTHOR : DR. A. AMUDHAVALLI

EVALUATION OF INFORMATION PRODUCTS : CRITERIA AND STEPS

Structure
15.0 Objectives
15.1 Introduction
15.2. IAC Products
      15.2.1.   Meaning & concepts
      15.2.2.   Need for Evaluation
15.3. Criteria for Evaluation
15.4. Steps for Evaluation
15.5. Summary
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15.0. Objectives
By studying this Unit you will be able to:
      *   emphasize the need for evaluation of IAC products
      *   highlight the features and nature of IAC products
      *   explain the criteria for evaluation of IAC products
      *   describe each of the steps involved in evaluating IAC products

15.1 Introduction

Today's information centres are challenged with the factors like Information Explosion, Scatter and Obsolescence. These factors are not only applicable to primary sources but also equally same with that of even the secondary sources of information. This has led to the information gap between the sources and users of information. This has totally diversified the role and responsibilities of the intermediate users or the so-called agents of information. Hence, to bridge the information gap and to offer an alternate to the end-user, the information professionals engage any of the following possible choices:
      *   compile varied types of repackaged information products (Lesson 1)
      *   refer or direct (referral service) to the source/s of availability and
      *   search and procure required IAC product/s available freely or on fee

The **quantum and the quality** of information products either in print and/or electronic forms, are in surplus that even the intermediate users run through difficulty in choosing the right document like that of the end users. They work under the pressure of information overload, duplication and overlap, lack of quality control etc. Hence the purpose of this lesson is to acquaint the students and guide them to evaluate systematically and choose the right information products.

This lesson is structured to explain and describe the criteria and steps involved in evaluating the varied information products on a set of standard criteria to select appropriate sources or documents for a library & information centre. In attempting to do that, it would be helpful to list the different types of repackaged products, their

features and nature of content, as each one is unique and special in its own merits. A clear knowledge of these IAC products is essential to examine and assess them.

15.2.   Information Analysis & Consolidation Products

15.2.1   Meaning & Concepts

The terms 'Information; Analysis; Consolidation; and Information Analysis & Consolidation (IAC) are all already defined in Lesson 1 of this Unit. Hence, they are excluded here.

Information Products - In this context, information products will be perceived as a collection of data (figures, facts, notions) provided to the end-user to meet their information requirements and for their processing and immediate usage or application in the chosen subject and physical form. The product may be tangible (entity) or intangible intellectual product (counseling)

Evaluation - In this context, it means the process of judgement or appraisal of an information product for its quality, merit and features. It is an exercise towards selection and acquisition policy of a source or product of information or service.

Criteria - A set of key/crucial features or standards fixed for the purpose of evaluation of an information product. There are a variety of criteria and sources of criteria for the appraisal of information products.

15.2. Need for Evaluation

Lots have been said about the speed and the rate of information productivity but less attention and consciousness have been found towards the quality of the freely flowing abundant of scientific information. This is felt more of the secondary and tertiary sources rather than the primary sources of information. With an increased awareness, accessibility and availability of information in print or online or electronic amongst the end- users, we tend to assess the quality more and more frequently. On the part of the intermediate users, the trend is to provide access to data rather than 'own your data'. Libraries and information centres have started to create their own repackaged products and or for acquiring such ready to use materials rather than the bulky, costly and original full length texts. With the advancement in Information, Communication and Technology and trends in marketing strategies suggest that evaluation of IAC products are essential as a mechanism towards quality control.

Hence, this quality control exercise has become mandatory and inevitable, though the library and information professionals are trained and have been engaged in this type of activity ever since. However, it assumes more relevance as more and more of IAC products of different forms and contents are demanded and also available. This being a continuous activity, costing heavily and consumes more time, a team comprising of subject experts and information professionals is a prerequisite.

Modern information managers stress that it is very difficult to evaluate the quality of information products, because the evaluation criteria may be changeable, and the essence of 'information' (the multitude and accuracy etc) as well as human factors are difficult to define in each individual case. The data, informative and relevant to one group may not be so with the other group. This means that an evaluator ought to use objective criteria and to know how to apply the according to the users' requirements.

15.3. Criteria for Evaluation of IAC Products

In order to evaluate information products for its features, it is necessary to check systematically and how these products meet the users' requirements and level of

satisfaction and conform the standards, using uniform criteria and evaluation indexes. There are many publications that discuss in detail the criteria for evaluating information products. The criteria and methods suggested by many professionals and experts have been reviewed and the following set of criteria were selected on the basis of the accepted standards meant for the appraisal of IAC products.

15. Accountability & Credibility
2. Availability & Accessibility
3. Completeness & Correctness
4. Currency
5. Data Citation
6. Physical Format
7. Graphics & Multi media
8. Inner Format
9. Producer
10. Purpose
115. Scope & Coverage
12. Usability

The above evaluation criteria are universal to all types of information products - primary and/or secondary; print and/or electronic. However, these may be modified, selected and changed as the case may be in a given context. With the progress of IT several techniques are being adopted in planning and producing IAC products within a very short time and with cost-effectiveness.

15.4. Steps for Evaluation of IAC Products

There are no set rules when considering the importance and the number of criteria used for evaluation. The evaluator makes the choice, and it should depend on the current and immediate needs and the purpose of evaluating a given IAC product. On starting an evaluation, consider which main criteria (those in bold type and Upper Case) to choose, and then begin to analyze the individual elements that are to be reviewed and evaluated according to a given criterion.

15.4.1   ACCOUNTABILITY & CREDIBILITY

Identify the ultimate goal set by the producers of IAC products and whether it is important:

*   providing information
*   instructing, giving advice
*   promoting something or some organisation
*   communicating one's own ideas or opinion
*   selling of goods
*   attracting the customers (promotional materials)

Evaluate the credibility of the information:

*   analyse related sources that deal with similar data
*   ascertain if standard tools & techniques are adopted
*   assess for its ease & economy of printing
*   check if it is tailored to the user/s need/s
*   ensure for its free flow & simplicity
*   examine if priorities are set for the specific data
*   find out for its feed back loop

* verify the content for its features
* verify for its relevance and comprehensiveness

15.4.2. AVAILABILITY & ACCESSIBILITY

The finished information product must be usable for which:
* ensure that the product is not only available but accessible also
* ascertain if the IAC product is free of cost or fee-based
* examinee for difference in the features between fee and free products
* check for the compatibility on file transfers
* look for if any & what type of infrastructure support is required

15.4.3. COMPLETENESS & CORRECTNESS

Examine the quantum of information, whether they fall within the scope & coverage and the requirements of the clienteles.
* check if balance is maintained between the original source of data based on which the IAC product is compiled
* ensure that there is neither scarcity nor abundance
* examine for its comprehensiveness and understandability
* find out if any redundancy or overlap of data is there
* look for its length and depth

15.4.4. CURRENCY

The value of IAC product lies in its up-to-dateness and its coverage. Hence, it has to be ascertained that:
* how frequently the product is updated
* what are the latest primary or even secondary sources used
* what are its citation pattern
* what are the dates of request and compilation of product

15.4.5 DATA CITATION

Citations reflect the quantum and quality of the content of the IAC products.
* check the citations for its scope, period and type of sources
* verify the authenticity of data (copyright)
* look for the citation pattern for its correctness and description

15.4.6 PHYSICAL FORMAT

IAC products are disseminated in varied forms. With the advancement of IT, the modes of distribution of information products are preferred in electronic form. Such are the types of a few products, that they are oral and hence through telephone or voice mail. Whatever be the chosen format, examine if
* the printed hard copies are loose or bound
* the soft copies are compatible or not
* both hard and soft versions are made available
* the standard format for each of the type of IAC product is adopted
* the data is structured, sequenced and notional system is followed
* the architecture and design is well laid out and organised
* a balance between the content and the form is maintained
* the length of the product is too long, considering the users' time.

15.4.7 GRAPHICS & MULTI MEDIA

IT has enabled the producers of information products towards a better presentation of data in a more colorful, picturesque and appealing manner.

* ascertain its authorization of form or copyright
* check for its appropriateness and linkage with the content
* decide its standard, automatic solutions & graphics (templates)
* ensure that it does not distract from the content or look irrelevant or limit the users' attention or cause irritation
* explore the multimedia effectiveness
* evaluate for the professionalism & originality of graphics usage
* examine the correspondence between the content and its corresponding icons or graphics
* look for its artistic and aesthetic values
* verify its functionality

15.4.8.   INNER FORMAT

The validity of the content of the product lies on its presentation. The most significant criterion for evaluation is this feature. One has to examine the content of an IAC product for its neat presentation in terms of the following:
* Clarity
* Directness
* Effectiveness
* Language
* Objectivity
* Punctuation
* Semantics
* Sequence and flow of data
* Structure and organization of data
* Style
* Syntax
* Text editing
* Use of jargons
* Use of charts, graphs and such other relevant supplements

15.4.9.   PRODUCERS

IAC products are authored by individuals and/or institutions, commercial and/or non-commercials. The credibility of the product owes to authorship.
* Ascertain if the producers are profit or non-profit oriented
* Check the familiarity, status and reputation of the authorship
* Ensure for copyright
* Find out the correspondence details of the producer
* Identify the type and level of the producer
* Look for mission statement
* To disqualify, if the product is anonymous
* Verify if its well edited or compiled

15.4.10.   PURPOSE

Each of the IAC products is prepared with a given purpose and for a specific target group. It is essential to understand the purpose before dissemination. Hence, the following set of questions are to examined in this context:
* Does it cover the scope of the chosen subject, time and space?
* Does it meet the users' requirements?

      *   Is it meant to be free of cost or fee-based?
      *   Is the target audience defined? If not defined, it has to be first identified.
      *   What is the mission of the production?
      *   What is the acting strategy? Is it being worked out?
      *   What is the intended purpose of the IAC product?

15.4.11. SCOPE & COVERAGE

This is a feature of an IAC product to be determined whether developed in-house or acquired. The following queries are to be cleared:

      *   Does the product cover the defined scope and the mission of the production?
      *   Does language or space or time frame restrict the product?
      *   Is it meant for users of the same interest across the border for a very restricted group?
      *   Does it meet the requirement of the user/s?
      *   Is it prepared under time pressure or conveniently?

15.4.12. USABILITY

With application of IT, the information products have to be examined for its:

      *   communication capabilities
      *   simplicity and soft skills
      *   competence and reliability
      *   user-friendliness

15.5. Summary

Evaluation of IAC products is similar to that of evaluating any other information products like journals or indexes. The criteria and methods of evaluating IAC products have been listed and explained in details. This Lesson facilitates the evaluator, whether it is the producer or consumer to be systematic, logical and objective in their approach.

15.6. Keywords

Quality - It is defined as the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs. Quality is often equated with usability ('fitness for use'), functionality customer satisfaction, or conformity with generally accepted standards and requirements.

15.7. Model Q & A

1.   Discuss the need for evaluating IAC products.

With an increased awareness, accessibility and availability of information in print or online or electronic amongst the end- users, we tend to assess the quality more and more frequently. On the part of the intermediate users, the trend is to provide access to data rather than 'own your data'. Libraries and information centres have started to create their own repackaged products and or for acquiring such ready to use materials rather than the bulky, costly and original full length texts. With the advancement in Information, Communication and Technology and trends in marketing strategies suggest that evaluation of IAC products are essential as a mechanism towards quality control. Hence, this quality control exercise has become mandatory and inevitable.

2.   What are the general criteria for evaluating IAC products?

The following are the set of criteria selected on the basis of the accepted standards meant for the appraisal of IAC products.

* Accountability & Credibility
* Availability & Accessibility
* Completeness & Correctness
* Currency
* Data Citation
* Physical Format
* Graphics & Multi media
* Inner Format
* Producer
* Purpose
* Scope & Coverage
* Usability

Each of these major criteria includes a set of further components, which enables an evaluator to examine the IAC product at a micro-level.

3.   Explain the method of evaluating the IAC products?

There are no set rules when considering the importance and the number of criteria used for evaluation. The evaluator makes the choice, and it should depend on the current and immediate needs and the purpose of evaluating a given IAC product. On staring an evaluation, consider the set of major criteria to choose, and then begin to analyze the individual elements that are to be reviewed and evaluated according to a given criterion. (Refer section 15.4. of this lesson for elaborate answer to this question).

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