KNOWLEDGE ORGANISATION SYSTEMS : TISS CASE STUDY

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Abstract:

The modest objective of the paper is to present an overview as seen from the inside of the daily practice in social sciences documentation and communication networks in India and around the world. An effort has also been made to carry out a detailed study in depicting the impact of information technology on information acquisition and retrieval which has been increasing in recent past. The study results on the awareness and development of changing environments and adoption of information technology tools to libraries. The authors' approach is for knowledge management through application of technology and resources as the mechanics was including databases, hypertext linkages, full text search and networking technology. Social science information network in India is the central theme of the paper. Social Science databases today, however ancient the fields origins, the practical creations of databases are from three-four decades. Social science fields are highly tangible and objective with the tacit knowledge of imperative reconstruction of world arts and humanities. The realms of knowledge due to increasing specialisation of multi disciplinary nature of social science database framework has also been presented in the paper.

INTRODUCTION

Knowledge management is rapidly developing as a specific and planned management practice to capture and re-use organisational knowledge. This might sound familiar to librarians who think it is what they do now. Knowledge management is an increasingly important source of competitive advantage for organizations. Knowledge embedded in the organization's business processes and the employee's skills provides the firm with unique capabilities to deliver customers with a product or service. Knowledge management is a form of expertise-centred management which draws out tacit knowledge making it accessible for specific purposes to improve the performance of organisations. Successful application of knowledge management practices involves understanding and constructively utilising information for organisational learning. Social Science institutions, Government and non- governement organisations, etc. are knowledge intensive, and the use of advanced technology may transform these institutions and organisations in the future.

FROM INFORMATION MANAGEMENT TO KNOWLEDGE MANAGEMENT

Knowledge management has thus far been addressed at either a philosophical or a technological level, with little pragmatic discussion on how knowledge can be managed and used more effectively on a daily basis. An overarching theory of knowledge mangement has yet to emerge, perhaps because the practices associated with managing knowledge have their roots in a variety of disciplines and domains. Mechanistic approaches to Knowledge Managment are characterised by the application of technology and resources to do more of the same better. The main assumptions of the mechanistic approach inculde:

- Better accessibility to information is a key, including enhanced methods of access and reuse of documents (hyper text linking, databases, full-text search, etc.
- Networking technology in general (especially intranets).

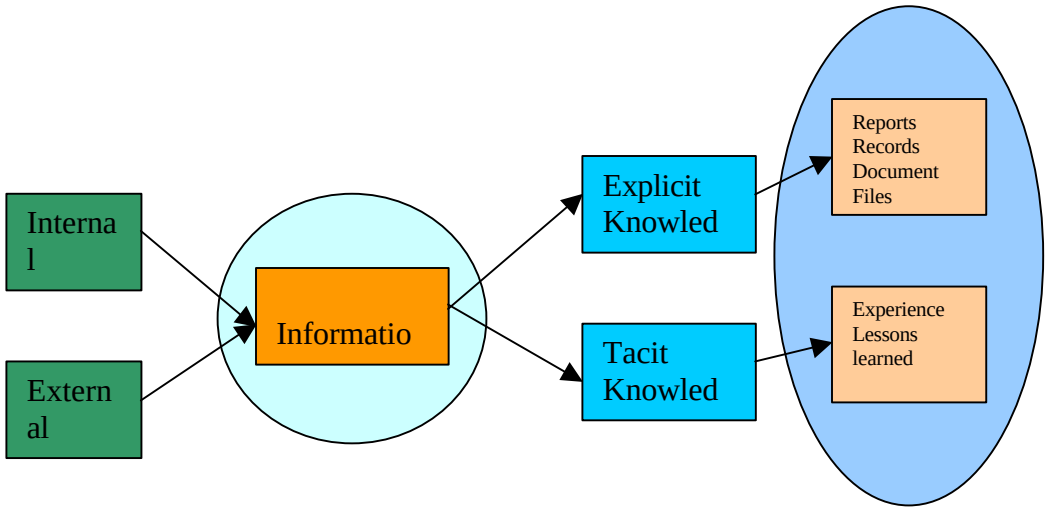
Knowledge management encompasses both the management of information and the management of people. Knowledge cannot be managed directly-only the information about the knowledge possessed by people in organisations can be managed. This statement by Streatfield and Wilson is an example of the emerging recognition that sound information management practices form a soild foundation on which successful knowledge management strategies can be developed. Good information management is seen as the essential prerequisite to knowledge management(Horne, 1999) yet many organisations are developing knowledge management strategies based on technical systems that disregard the information resources and the people who create the knowledge.

Defining knowledge is difficult, as it incorporates many intangibles such as experience, intuition, judgement, skill and lessons learned which have the potential to create value for a business by informing decisions and improving actions. Knowledge is constantly being created by employees as they do their jobs. Some of this knowledge can be articulated, captured, stored and accessed for re-use. Much of the knowledge, however, is tacit knowledge and is never articulated until the need to re-use it occurs. This first step in any knowledge management program is to identify where knowledge is being created, where is already exists and where it is needed to support decisions and actions. Organisations that have not yet developed a strategy in place that could be working better are in an ideal position to go back to basics and find out exactly what knowledge they need to manage to gain a competitive advantage using an established information management methodology. Using the information audit as a first step in developing a knowledge managment strategy or improving the strategy you have can ensure that you are managing the knowledge your organisation needs to manage to be successful.

Figure 1 illustrates the ‘data to information to knowledge’ process that occures in every organisation. Moving from left to right-data is used to enable and support the tasks and activites of its business units, sections or departments. The data can originate inside the organisation or be acquired from external sources. As a task or activity is performed the data is transformed into information which is then filtered, further transformed, reused, stored or transferred. The process of creating information, the data to information

transfer process, is a knowledge-creating process that creates both explicit and tacit knowledge. Explicit knowledge is the output of tasks and activities that can be documented as reports, databases, procedures etc. It is easily captured, stored and communicated. Tacit knowledge resides in the heads of employees and is more difficult to capture and communicate. It consists of the lessons learned by doing a job is made up of gathered experience and understanding. Tacit Knowledge is of no value to the organisation until it can be applied as the knowledge held by an employee is of no value until that employee can use it for the benefit of the organisation. The tacit knowledge that is created during this process as people assist in the transformation and experience it is often lost unless methods can be developed to identify and capture it and then enable access to it so that it can be applied. The knowledge asset that needs to be managed by an organisation, illustrated at the far right of Figure 1, consists of both explicit and tacit knowledge and any knowledge management strategy that is developed must incorporate them both.

Figure 1: From data to knowledge



Developing a Knowledge management strategy

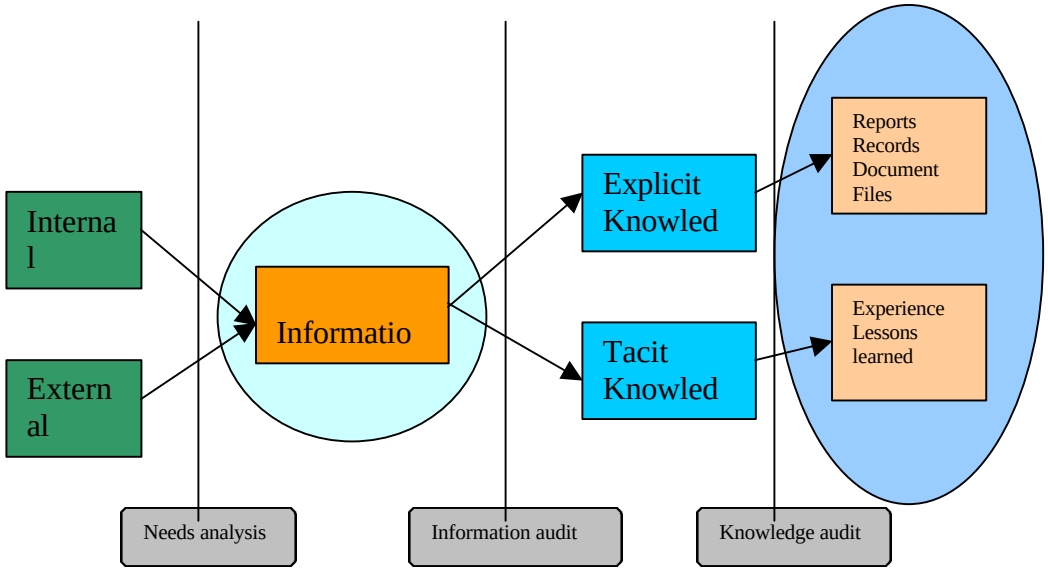
There is no generic model for developing a knowledge management strategy as each organisation has unique needs that must be identified and understood. Some organisations are embarking on knowledge management programs without an understanding of why their knowledge assets are important. Rather than being in a position to make informed decisions about what knowledge they need to manage, they attempt to manage everything, whether it is significant or not. They often consider the information technology infrastructure to be the knowledge management system, rather than merely the enabler, and think that all they need to do is buy an expensive computer system and it will all be done for them.

To develop a knowledge management strategy that incorporate the management of both tacit and explicit knowledge it is critical that the knwoledge creation process is understood and that the understanding extends ot the role of the people involved in the process. The first step is to identify where knowledge exists and where it is needed to support decisions and actions. An understanding of the organisation and how it works, including its structure and culture, internal and external relationships, formal and

informal communication networks is critical as thre are the characteristics that will determine the best way in which to manage knowledge in that particular organisation.

Figure 2 illustrates the three audits that are used to move an organisation from information management to knowledge management. They are the needs analysis, the information audit and the knowledge audit. It also indicates the point in the data to knowledge process where they are each the most useful.

Figure 2: From needs analysis to knowledge audit



The needs analysis is a process by which information users are asked precisely what information resources or services they need to perform their jobs. It usually results in a list of resources that are required by each person or department, and can be used to rationalize acquisitions (determining what will be bought and who will it be bought for), delivery mechanisms (getting the right resources to the people who ned them) and service levels (identifying who needs specific services and at what level).

The information audit goes one step further in not only finding out what information resources and services people need to do their jobs, but how those information resources and services are actually used. It looks at the objectives, critical success factors and tasks and activities of each group, business unit, department or secton, and links them with relevant organisational objective. It identifies the information that is reqwuired to support each task or activity. It is then possible to trace a specific resource from the task it supports to the organisation objective, and assign a level of strategic significance to it. This allows you to not only identify those resources and services that are supporting organisational objectives but also to 'rate' them according to their strategic significance.

An information audit also enables you to map information flows within an organisation and between an organisation and its exernal environment. This is a significant feature of the process as it identifies the existing formal and informal communication channels that are used to transfer information as well as highlighting inefficiencies such as bottlenecks, gaps and duplications.

KNOWLEDGE ORGANISATION MODEL

Systematic approaches to knowledge management retain the traditional faith in rational analysis of knowledge problem: the problem can be solved, but new thinking of many kinds is required. Some basic assumption: a resource can not be managed unless it is modeled, and many aspects of the organisation's knowledge can be modeled as an explicit resource.

Figure 3 is intended as a summary of the processes that contribute to information processing and the creation of knowledge. Knowledge management as a discipline must be concerned with the management of all of these processes. Some of these processes are performed by individuals, whilst others are performed by organisations, or, in some cases, information professionals on behalf of organisations.

SOCIAL SCIENCES RESEARCH IN INDIA : A SCENARIO

Social sciences, a discipline of study, has made steady progress in this country during the past 50 years or so. Because of their vital role in economic development and social change, the Social Science institutions have received fairly good recognition, support and encouragement from the government and other public as well as private organisations. They have now expanded as centres of excellence for teaching and research, manpower development and as professional organisations. An idea about their present status in the country can be obtained by looking at different indicators such as the number of post-graduate teaching and research departments, of doctoral students, of research institutions, publication activity, social science manpower, etc.

Although statistics about these indicators are somewhat sketchy yet on the basis of the available information it can be estimated that the number of post-graduate departments in social sciences in universities alone exceeds 3,000 with an annual enrolment of doctoral students being around 10,000. Percentagewise, total enrolment of students for post-graduate studies in social sciences is estimated to be about 60 per cent of the total enrolment in colleges and universities and the number of doctoral students is around 40 per cent. In addition to the. colleges and universities, there are about 600 institutes engaged in research, training and counselling work in social sciences.

SOCIAL SCIENCE INFORMATION NETWORK IN INDIA

The recognition of the vital role LISS (**L**ibrary, **I**nformation **S**ystems and **S**ervices in India) could play in the educational, scientific, industrial and over-all socio-economic development of India began to receive acceptance only after Independence in 1947, when the government embarked upon several programmes of national development and reconstruction. The need for developing these systems and services became all the more essential because of certain factors such as: (i) vast proliferation's in the, universe of information and knowledge, and the resultant document/information explosion in the world; and, (ii) the varied and complex needs of users for information in R&D activities, educational and research programmes and various other fields of human activities. As a result, a fairly large infrastructure of LISS has been developed in the country during the past five decades or so. Though much remains to be done in this field yet the

achievements already made can largely be considered as commendable providing an optimistic basis for the future. Besides the developments in different types of libraries, documentation/information centres, bibliographical services, etc.; library and information networks at local level such as DELNET and CALIBNET, and at the national level such as ENVIS, NISSAT and INFLIBNET and others are being developed. Access through information networks such as NICNET, ERNET, SIRNET, INDONET and several others is being utilised in the LISS in the country for services such as CAS and SDI. INTERNET facilities are being used in many libraries and information systems for benefit of the users.

The development in teaching and research in social sciences certainly emphasises the need for well stocked libraries and information centres with proper library and information services and manned by well qualified staff. The total number of libraries in social sciences either as part of the universities, government departments, autonomous or semi-autonomous organisations or institutions can be estimated to be around 850. The document collected in an average social science research library (excluding the university libraries) ranges between 15,000-25,000 volumes, with-the number of the current journals being received may be 150-250. Most of them are managed by well qualified professional staff. Most of them, however, including the university libraries suffer from Brick of the required financial support with the result that they in general are not in a position to update their document collection. Most of these libraries are organised on traditional lines and continue to provide the conventional services to their clientele. However, some of them have recently started using computers and CD-ROMs for their services. With the development telecommunications and information networks in the country, a few. of these libraries have started getting access to different databases at the national and international level. Management Information System (MIS) is an integrated information system which provides the information for making decisions regarding the integration of the organisation through the process of management. For this, MIS can be defined narrowly as the automating of routine and structured tasks to support decision making. It supports decision making at all levels of management processes. MIS are made of people, computers, procedures, databases, interactive query facilities and so on.

ONLINE SERVICES AND CD-ROM DATABASES

Electronic communication & technologies had greater impact on the activities of social scientists- This new technology facilitated maximum information retrieval, information exchange & discussion among social scientists and dissemination of information though electronic publishing.

The technological content within which library operates has been changing rapidly. The information revolution is well documented. Much more information is being produced in variety of forms, led to the concept of paperless society. In this consent of electronic publishing, libraries are becoming more electronically based. This has led to the emergence of electronic journals that provides unique opportunity in the form of low cost delivery mechanism for full text documents with graphics & the economy in storage Users gain instant access to current & archival issues of Journals through various access points available either on CD-ROM format or WEB.

In 1980's majority of databases on different disciplines covering world literature available on-line as well as CD-ROM format. CD-ROM has a capacity to store 550 MB of

information equivalent to 2,75,000 pages (A4 size) of information- These CD-ROM's has considerably reduced the size of library- Information available on books, Journals are covered by CD-ROMs with a greater retrieval efficiency.

Major information providers Includes dialogue information-service, Palo Alto, California; Datastar, Switzerland, Silver Platter, etc. all involved in launching databases both online as well as CD-ROM's. For instance, dialogue information services provides access to more than 700 databases while silver platter has a collection of over. 220 bibliographic & full text databases that cover wide range of subject areas.

MAJOR DATABASES IN SOCIAL SCIENCES

Sr. Title	Coverage Data	Type	Updation	Subject No.
1. Ageline	1978-date	Bibliographic	Tri-annual	Ageing, Economics, Gerontology, Health Science, Psychology Social Sciences, Sociology
2. Current Contents (5)	1990-date	-	Weekly	Social & Behavioural Sciences - 6 (Social Services)
3. Econlit	1969-date	Bibliographic	Quarterly	Business Economics, Finance, Statistics Welfare
4. Psych.	1967-date	Bibliographic	Monthly	Business, Education Information, Medicine, Psycholog, Social Information
5. Social Science Abstract	1994-date	Bibliographic	Monthly	Anthropology, Economic laws, Public Administration Social Science
6. Social Science	1983-date	- do -		
7. Social Work Abstract Plus	1977-date	-	Semi-Annual	Acquisition, Alcohol Abuse, Clinic, Eco. Psychology, Geront-ology,Social Science
8. Sociofile	1974-date	Bibliographic	Tri-Annual	Acquisition, AJM, (equivalent in print is sociological

9. Social	1972-date	Weekly	abstracts) Social Science (ISI)

Sources:

a) Silver Platter Director, 1998
b) http://www-silver platter.com

Conclusion

To keep pace with the time, libraries are left with no option but to go for application of information technology in the library activities and services in order to disseminate the information pin-pointedly, exhaustively and expeditiously of micro nascent documents. Because of this proliferation of information products and delivery methods, information users within organisations are suffering from 'information overload' and in many cases are using a variety of resources to gather their information, some of which may be not be the appropriate for their needs. Many organisations are Structured in such a way that the business units operate independently of one another, yet they rely on similar information resources. Some operate without the resources they need because they don't know where the find them, while others engages in 'information overkill' and purchase anything that looks like it might be relevant. Consequently there are often significant gaps, inconsistencies and duplications in information resources within an organisation.

As well as ensuring that the appropriate information is provided, there must be a clear and visible alignment of the information that is acquired by the information users with the organisational or business unit objectives. The Challenge for today's information that is needed to optimize the achievement of organisational objectives, who it is needed by, how it will be used, its source and how it flows through the organisation and between the organisation and its external management methodology that will address all of these issues.

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