

KNOWLEDGE MANAGEMENT

B K SEN

Structure



- 3.1 Introduction
- 3.2 Data, Information and Knowledge
 - 3.2.1 Data
 - 3.2.2 Information
 - 3.2.3 Knowledge
- 3.3 Management of Data, Information and Knowledge
- 3.4 Tacit knowledge
- 3.5 Technologies for Knowledge Management
- 3.6 Prerequisites for Knowledge Management
 - 3.6.1 Sharing of Expertise
 - 3.6.2 Knowledge Mapping
 - 3.6.3 Knowledge Workers
 - 3.6.4 Value Creation
- 3.7 Major Challenges of Knowledge Management
 - 3.3.1 Lack of Sharing of Expertise
 - 3.3.2 Attaining Expertise
 - 3.3.3 Handling of Tacit Knowledge
 - 3.3.4 Legal Issues
- 3.8 Conclusion
- 3.9 Apply What You Have Learnt

Learning Objectives



It is expected that after going through Unit 3 you will be able to

- ❖ Understand the concept of knowledge management
- ❖ Differentiate between data, information and knowledge
- ❖ Have a fair idea of tacit knowledge
- ❖ Gain a fair degree of knowledge about technologies, prerequisites and major challenges of knowledge management.

3.1 Introduction

Unit 3 on Knowledge Management (KM) pertains to the basic activity of planning and implementing our tasks in a systematic and efficient manner. Its relevance for adult educators is obvious as they are generally responsible to

accomplish many a task in their capacity of professional adult educators. Unit 3 has focused on the theoretical understanding of the concept of knowledge management. In Unit 4 you will learn about its skill component. The

two units together prepare you to apply the concept to your day-to-day activities at an adult education setup.

The concept of management is known to all of us. In our daily life we use this concept more often than not to accomplish various tasks systematically. Managing various activities requires precise planning in advance and proper implementation. Suppose, you have been given the responsibility of organizing Independence Day celebration in your adult education centre. Immediately you are to start planning as to the particular spot in the centre where it will take place; time when the celebration will start; the person who will hoist the flag; informing the people of the community about the celebration; the collection of subscription, if required, to meet various expenses; making the venue attractive as well as comfortable for sitting; arranging the flag, flagstaff and flowers; giving the responsibility to someone to train the boys and girls of the community to sing the national anthem after flag hoisting and also perform other cultural functions; contacting the photographer to take photographs or video of the function and so on. Once the celebration is over, you are to see that the venue is cleaned, the flag and the flagstaff are preserved properly for the

next year, the payments due to those involved in the celebration are made, the necessary accounting of the money raised through subscription is properly done and made known to people who paid the subscription. If all these activities are done without any hitch, then the people will say that the celebration has been organized very well which would not have been possible without proper management.

While organizing the celebration, you have recorded various things, e.g. the amount of subscription collected from various sources, the expenditure incurred for diverse purposes, the responsibilities given to various persons, and so on. These recordings are in fact data which provide us information either straightway or after processing. You have also gathered information from various persons who organized such activities earlier. The persons who have given you information have in fact shared their knowledge with you. As an adult educator, you need to manage the various activities of the adult education centre. Unit 3 aims to equip you with the requirements of managing adult education programs efficiently and effectively.

In the next section we shall deal with data, information and knowledge.

3.2 Data, Information and Knowledge

The three terms, data, information and knowledge are semantically interlinked and often you may find people using them indiscriminately and creating confusion in mind. Let us carefully discuss each term and its specific meaning in our context and find the relationship among them.

3.2.1 Data

We encounter various definitions of data in dictionaries. For our purpose we shall use the following definition - 'Facts or figures from which conclusions may be drawn' (NWDDC 1993). We shall try to understand the concept with certain easy examples. For celebrating certain public

festivals we usually raise subscriptions for which we use subscription books. In the subscription book we record the name of the subscriber, his or his/her address as well as the amount given. All these are data.

During census operations, enumerators visit every household and record in a prescribed form the name, sex, age, educational qualification, occupation, and so on of all the family members of the household. Data gathered by each enumerator is transmitted to the office of the census commissioner for processing and generating information.

You may note that data are quite often recorded in figures, e.g. statistical data; and sometimes also in words, e.g. the address of a person. The role played by data in management is enormous.

3.2.2 Information

Information is a very common term and we use it quite often in our day-to-day conversation. We receive information from newspapers, radio, television, relatives, friends, teachers and many other sources like written media, print media and oral communication and so on. Sometimes we generate information by virtue of our multifarious activities.

A dictionary provides a number of definitions for the term 'information'. For our purpose, we shall take into account the following definitions: i) Any fact or set of facts, knowledge, news or advice, whether communicated by others or obtained by personal study and investigation (see HWG 2006); and ii) Data that has been processed into an organized, usable form and is meaningful to the recipient for the task at hand (cf. Szymanski, et al 1994).

Let us now try to understand the meaning of information from the

definitions given above. Everywhere in the world, nay, the universe, incidents are happening. Some persons are observing these incidents. When the observers are communicating these incidents to people, they are getting informed or getting information about the incident. On 21 July 2006, a Haryana boy, called Prince fell into a deep borehole on his sixth birthday and had to stay there for about 50 hours awaiting his rescue by military personnel. Reporters there were continuously witnessing the rescue operation and airing the news through radio and TV and people not only in India but also in many parts of the world were getting the latest information about the rescue of the boy. In this case an incident gave birth to a lot of information.

A person may acquire knowledge by observation, reading, thinking, research, listening, tasting and feeling. When the person communicates his or his/her knowledge by telling, writing, printing or recording, it becomes information.

Now, we take up the second definition and try to see how the organization of data in a desired way becomes information. We have already seen that subscription needs to be collected using a subscription book for organizing a function like Independence Day celebration. The subscription book will have the data relating to the name and address of the person and the amount contributed. Now, if we add the amounts recorded in all the subscription books, we generate information as to the total subscription raised. We may arrange the amounts contributed by individuals in ascending order to find out the minimum amount contributed, maximum amount contributed, amounts contributed in the range of Re. 1-5, Rs.

6-10, and so on. Thus, you see, we generate different information using the same data set. Information being generated through the processing of data is usable and meaningful. In many cases a piece of data itself provides us information. For example, if we want to find out how much Ms. X has contributed we can do so by checking the subscription book.

3.2.3 Knowledge

Data and information are like tangible products. They can be collected, handed over, distributed, and so on. Take for example, mark sheets. They contain data as to the marks a student has obtained, division s/he has secured, the school from which s/he passed and so on. The concerned Board of Examination has distributed these mark sheets to various schools wherefrom they are distributed to students. We cannot collect and distribute knowledge in the same way. Every day the newsboy distributes the newspapers to various subscribers. The principal of a school or college may ask one of his teachers to distribute mark sheets. S/he cannot ask the teacher in the same way to distribute knowledge among students. Knowledge is more abstract, hence it cannot be treated as a product. It is a philosophical concept.

Dictionaries provide many a definition for knowledge. We take only the following definitions for our purpose: i) 'all that has been perceived or grasped by the mind; learning; enlightenment; ii) the body of facts, principles, etc. accumulated by mankind' (NWDDC 1993).

From the first definition it is very clear that mind is involved in the case of knowledge. Throughout our life we observe, read, hear, and feel many a

thing. Of all these, whatever we can grasp or perceive is our knowledge. It is always to be borne in mind that *knowledge is personal*. An example is being given here to distinguish between information and knowledge. A teacher before delivering his/her lecture in a class distributed the photocopy of his/her class note on the topic to each student. Afterwards s/he took the class as usual, explained the topic, and answered questions asked by the students. Finally, s/he took a class test on the topic. On examining the answer books s/he observed that the answers varied from student to student even though the same amount of information was distributed to each student by way of the class note and the lecture. The test clearly showed that knowledge gained varied from student to student despite the distribution of equal information. This is the knowledge we are concerned with in knowledge management.

Every day we are getting a plethora of information from diverse sources like television, radio, newspapers, books and people talking to us, events happening before us, and so on. We cannot digest all the information that we receive because of our limited knowledge. An erudite lecture on Einstein's theory of relativity broadcast by a TV channel may not be digested by most viewers. On the other hand a lecture on solar eclipse can easily be grasped by most people. So, the limited knowledge of a person does not allow digesting every piece of information s/he receives. Whatever s/he can digest properly gets internalized and adds to one's knowledge. Now, on the basis of this knowledge, s/he can provide information to others. Incomplete and half-digested information many a time gives rise to

rumors or wrong information. Let us give a concrete example here. It is an incident of late 1960s when television transmission from Delhi station used to start around 6 PM and continued till around 10 PM. Prior to 6 PM, a girl with chest pain visited a doctor. The doctor as usual examined her and advised X-ray of the chest. While talking to another person, the doctor said - 'TV has already started'. The girl heard the doctor as saying 'TB has already started'. She was totally upset and her agony continued till the X-ray report revealed nothing of the sort. Here is a

case of improper grasping of information caused by incorrect hearing. In knowledge management listening to a person with undivided attention is of paramount importance.

The other definition is quite clear. From the early days of civilization till date whatever facts, principles, ideas, etc have been accumulated by mankind is knowledge. It is to be remembered that all facts etc are recorded in the form of information. Whenever mankind comprehended the facts embedded in information, it became knowledge.

Activity 3.1

- Define data, information and knowledge. Explain briefly how data is related to information.
- Also answer the question: when does information become knowledge?
- Write your answer on a separate sheet of paper.

3.3 Management of Data, Information and Knowledge

Data and information have been recorded since time immemorial on stones, clay tablets, papyrus, parchment, vellum, palm leaves, *bhojpatras* and paper and so on. Now we record data and information on microfilms, microfiche, ultrafiche, magnetic tapes, compact discs, hard discs of a computer and so on. Anything on which information has been recorded is usually termed as a document. For management, these documents are classified, catalogued, properly arranged on shelves or other places, maintained and preserved. Whenever needed they are used by students, teachers, professionals, managers and so on. Libraries in the world are famous for the management of documents containing data and information. Many a time data is recorded in registers (e.g. in banks, universities, etc), forms,

paper files, computer files and so on. In every office there is a system of organizing registers, files, forms, and so on. Whenever needed these documents are retrieved, used, and placed back when done with in shelves, cabinet, etc. for future use. Knowledge base is a specialized database containing information on a specific topic. It is a centralized repository of information and data.

Knowledge management involves the management of data and information in one side and management of the knowledge of employees on the other side. Documents and employees - all are carriers of knowledge. The way we manage data and information, the same way we cannot manage employees. The content of knowledge in a particular set of data or in a particular document is constant. The messages of Asoka, the

king of Magadh, recorded more than 2,000 years ago on stones has not undergone any change. The marks and other details of students which have been recorded in a Calcutta University register one hundred years ago have remained the same till date.

This is not the case with the knowledge content of an employee. A library employee who joined the profession twenty years ago might have forgotten today many rules of cataloguing due to non-practice. On the other hand s/he might have gained substantial knowledge in library automation in which s/he is involved during the past several years. Thus, we see the knowledge content of an employee undergoes change with the passage of time.

Whenever we take a book and go through it we know about its knowledge content. It is pretty difficult to fathom the knowledge content or simply knowledge of an employee. The information about the qualifications and experience of an employee gives some idea about his/her knowledge. In certain cases, that might be the tip of the

iceberg. The employee might have attained in-depth knowledge in computer application through his/her own effort, working with computers in office, cyber cafes or at home. The records available in the office might not give any idea about the newly acquired knowledge of the employee.

An employee may become highly knowledgeable or an information gatekeeper of an organization. Identifying such an employee, giving his/her due importance and incentives, and tapping his/her knowledge properly may benefit the organization profusely. It is to be taken care of in knowledge management.

Knowledge of the employees that is used to run an organization is called the corporate knowledge. It is a conglomerate of visions, policies, strategies, rules, procedures, traditions, and people. Miller (2002), Documentum's Chief Executive Officer, very aptly said: 'Every afternoon our corporate knowledge walks out the door and I hope to God they'll be back tomorrow'.

3.4 Tacit Knowledge

Tacit knowledge is believed to be the expertise a professional possesses and utilizes it whenever needed. S/he can orally explain it and if necessary write down. For example, a classifier can lucidly explain the rule of classification, and write it down. Following which an inexperienced classifier will be able to classify a book. Initially, s/he will take time for the job, and gradually s/he will pick up speed. On the other hand, a tea taster tastes tea and grades six cups of tea as excellent, very good, good, fair, bad and very bad, according to its quality. Now, it will be very difficult

for the taster to explain or write down how s/he has decided the quality of tea as excellent or bad. This is inexpressible tacit knowledge. Take another example, with the basic ingredients of milk and sugar, a cook demonstrates to a layperson how a *rosogolla* is made. The methodology can also be written down. When the layperson tries to prepare the *rosogolla* following the same method, the sweetmeat does not become so tasty. Here lies the tacit knowledge of the experienced cook, which has been developed through years of experimentation and experience.

Undeniably, the tacit knowledge of the employees is an asset to an organization and its proper utilization and nurturing is a good example of knowledge management. Moreover, the case descriptions of highly successful projects usually include ‘a statement of the problem being solved, the circumstances that are relevant to the case, the steps the expert goes through in the solutions of the problem, the specification of

useful data and information relevant to the exercise, and the outcome’(Blair 2002: 1025). These case descriptions form the firm base for the establishment of the set of best practices which often serve as a benchmark for comparing the quality expected of practicing experts (Blair 2002). Collection of ‘good practices’ is an important component of knowledge management.

3.5 Technologies for Knowledge Management

We have seen in the foregoing pages that knowledge resides in documents as well as in the brains of experts. Retrieving necessary information from such a multitude of sources is undeniably a daunting task. Fortunately, database management systems (DATA BASE MANAGEMENT SYSTEM or DBMS) developed by Oracle, INTERNATIONAL BUSINESS MACHINES (IBM) and Informix can cope efficiently with a wide variety of information media to retrieve desired information.

The advent of Internet, World Wide Web, high bandwidth communication technology, TRANSMISSION CONTROL/INTERNET PROTOCOL (TCP/IP) communication protocol, digital networks like INTEGRATED SERVICES DIGITAL NETWORK (ISDN) and DATA SET LEVEL (DSL); multimedia mark-up languages like HYPertext MARKUP LANGUAGE (HTML) and XML have added unimaginable dimension to knowledge management. Now, we can think of managing knowledge on a global scale. A multinational company may have

branches all over the world with thousands of employees working in them. Managing the knowledge of the company lying in files, blue prints, drawings, variety of reports, books and other published documents, press clippings, data sheets, human brains, and so on was unthinkable even two decades ago. Now this huge quantum of knowledge can be managed by storing them in databases, and getting the databases connected through internet or intranet.

As far as storing is concerned, there is no problem as such. A single DEWEY DECIMAL CLASSIFICATION (DDC) can store information scattered in thousands of sources. The problem still exists with the retrieval of information. Today in most cases we try to retrieve information using words which almost invariably yield huge amount of garbage many a time hiding the required information. The retrieval mechanism is yet raw and requires a great deal of sophistication.

3. 6 Prerequisites for Knowledge Management

Prerequisites of knowledge management comprise sharing of

expertise, knowledge mapping, knowledge workers and value

creation. We shall briefly discuss each of the items here.

3.6.1 Sharing Expertise

In an organization each person possesses some expertise. For example, in a library one may be an expert in classification, another in cataloguing, the third person in computer application and so on. When a new person joins a post, in many cases s/he may be totally fresh from the university with nil experience. In such a case the new entrant quite often may require the help of his/her seniors who are experts in their respective areas. Here comes the question of sharing expertise. If the seniors share their expertise with the new entrant, then s/he will pick up his/her job fast, his/her productivity will improve, and gradually s/he will also turn into an expert. On the other hand, if the senior does not share his/her knowledge with the new entrant, s/he at times will commit mistake, and obviously will take time to learn his/her job. It will not be beneficial to the organization. Hence, a culture of expertise sharing is to be developed in an organization. Otherwise the organization will suffer.

3.6.2 Knowledge Mapping

No two individuals possess exactly equal knowledge. A few persons of an organization may have equal qualifications and experience even then their knowledge will not be the same. Hence knowledge mapping of every employee is considered so important. While mapping knowledge, apart from listing the employees along with their qualifications and expertise, their specific problem solving capacities are also to be included without fail.

3.6.3 Knowledge Workers

A knowledge worker is 'a member of the organization who uses knowledge to be a more productive worker. These workers use all varieties of knowledge in the performance of their regular business activities. Everyone, who uses any form of recorded knowledge, is a 'knowledge worker' (Earthlink 2005). The definitions obtained from Internet provide a clear understanding of the concept of 'knowledge worker'. The first definition is more elaborate and better portrays a knowledge worker. It says a knowledge worker uses 'knowledge' which belongs to his/her and acquires some more from other sources like WWW and other experts. The second part of the definition mentions that knowledge workers use 'all varieties of knowledge', i.e. knowledge which is recorded in documents or websites in the form of data or information, tacit knowledge of the worker herself, and also of other experts of the trade.

To be a successful knowledge worker, s/he should have the ability to pick up from the bewildering multitude of information sources the information that is authentic and validated. Otherwise anytime s/he may slip into a pitfall.

3.6.4 Value Creation

One of the most desired goals of knowledge management in an organization should be value creation within the organization. This value does not necessarily mean the economic value. Philanthropic organizations, government bodies, etc do not create economic values. Here value creation is directly related to providing support to effective decision-making.

Activity 3.2

Enumerate the prerequisites for knowledge management.

3.7 Major Challenges of Knowledge Management

Major challenges of knowledge management relate to the sharing and attainment of expertise, handling tacit knowledge, legal issues, etc. We shall dwell on them briefly.

3.7.1 Lack of Expertise Sharing

The sharing of expertise fosters friendship, generates amicable relation, engenders helpful cooperation and creates a congenial atmosphere in an organization highly conducive to work. Unfortunately expertise sharing is not always smooth. Because, many experts feel that if they divulge their expertise completely, they will lose their importance and will no more be the so-called 'experts'. They may not feel interested in sharing expertise when they know very well that they are not going to get anything in return. Instances show that whenever a knowledgeable person leaves, an organization loses useful expert, sometimes the loss is too much to run a project. Finding a good replacement for an expert quite often proves to be difficult.

3.7.2 Attaining Expertise

There is some understanding as to how a person turns into an expert. However, the process is not yet completely understood. Several persons with the same qualification and experience will not have the equal expertise. A tricky problem in a complicated machine that baffles an engineer with brilliant academic records and sound experience can at times be detected and rectified by a simple mechanic practically in no

time. This is the beauty of expertise. When more will be known about the process of expertise attainment, possibly knowledge management will become a shade simpler.

3.7.3 Handling Tacit Knowledge

The tacit knowledge that is expressible poses no major problem. It can be recorded and used any number of times depending on the need. The inexpressible tacit knowledge is still a formidable problem in knowledge management. The expert cannot express it in words hence it cannot be recorded. Some people during the course of their work develop sixth sense or presence of mind which at times helps them tide over a difficult situation. The person concerned may not even know how the sixth sense or presence of mind developed in him or his/her. Obviously the person will not be able to explain how one can develop it. It is not known how this problem will be solved, when it will be solved, or it will be solved at all.

3.7.4 Legal Issues

Legal issues relate to intellectual property right (IPR). Knowledge or expertise gained by, say Ms. X, with his/her own efforts is his/her intellectual property. If the same is gained in the course of his/her work in an organization, justifiably it should be the intellectual property of the organization. As long as Ms. X is the employee of the organization, there is no problem. While leaving, Ms. X will not be able to deposit back his/her intellectual property to the organization. S/he will carry it with his/

her. If she uses or divulges this intellectual property in another organization, will it be a breach of IPR? If the answer is 'Yes', then immediately the question arises - what is the solution? What weapons the organization should have to stall the transfer of the property to another organization? It

should also be remembered that quite often an organization poaches an employee of another organization at a high price just to milk the intellectual property s/he has gained there. This is a tricky problem of knowledge management begging solution.

Activity 3.3

What information is to be recorded for knowledge mapping of an employee?

3.8 Conclusion

After enumerating the objectives and providing a brief introduction, the terms data, information and knowledge have been defined and explained. Tacit knowledge and technologies for knowledge management have been briefly touched. Under the heading prerequisites for knowledge management sharing of expertise,

knowledge mapping, knowledge workers, and value creation have been discussed providing adequate emphasis. Major challenges of knowledge management have been dealt with laying emphasis on sharing and attaining of expertise, handling of tacit knowledge, and legal issues involved relating to the acquisition and sharing of expertise.

3.9 Apply What You Have Learnt

As an adult educator you need to plan and implement your activities at your ALS. For this purpose you consider the idea of holding a meeting of all those working in the ALS and explaining about the meaning of the terms, data, information and knowledge and then

about their management. Write a note of two pages on what you would like to say in this meeting as its first speaker who is introducing the purpose of the meeting and explaining the prerequisites for knowledge management.

