UNIT 1 LIBRARIES, INFORMATION AND KNOWLEDGE-BASED SOCIETY

Structure

1.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain the characteristics of modern society;
- list the type of institutions founded by it to meet its activities;
- comprehend the need for and role of libraries to meet the different requirements of persons in society;
- discuss the expanding dimensions of libraries and new information institutions in a changing society;
- explain the concept of information society and its impact on information profession;
- discuss the meaning of Knowledge Society, its impact on economy; and
- explain the concept of National Knowledge Commission (NKC) and its recommendations.

1.1 INTRODUCTION

Modern society is a society of institutions. Peter Drucker observes that "every major task, whether economic performance, or health care, education, or protection of environment, the pursuit of new knowledge or defence, is today

being entrusted to big organisations, designed for perpetuity and managed by their managements. On the performance of these institutions, the performance of modern society – if not the survival of each individual – increasingly depends". He further affirms that every institution comprises human beings – men and women, whose performance brings success or failure to the institution and thereby to the society.

Libraries rank among society's most important and useful cultural institutions. They play a vital role in the world's systems of communication and education. The numerous resources and services that libraries provide help people to carry out their work, studies and leisure-time activities. Libraries provide access to knowledge and information that has been accumulated throughout history. People of all walks of life – including students, teachers, scientists, business executives and government officials – use library resources for their work. Since knowledge and information are so vital for all round human development, libraries and other institutions that handle knowledge and information are *invaluable* to the society.

In this Unit, an attempt is made to introduce to you the important role that libraries play in the educational process of formal and non-formal learning, in research and development, etc. It may be noted that with spectacular advances in Information Communication Technology (ICT) and increasing groups of users and their information requirements in different situations, modern society is heading towards an information society in which the central instrument of change, force and direction of change, are knowledge and information. Proper understanding and assimilation of these ideas is essential for you to fully grasp the role of libraries in the emerging information and knowledge society.

1.2 MODERN SOCIETY: SOME CHARACTERISTICS

We are living in a new era in which a highly integrated and self conscious society is evolving. We give it the name of modern society. The consumer today is different from the consumer of yester years. We have seen how changing life styles have brought about a change in demands for goods and services, changing the consumer market. In the present day, with better education opportunities, both literacy and Information Technology (IT) literacy rates are improving. More and more homes have radios, telephones, television sets, and computers (signifying modernity). Even schools have introduced computers in teaching and learning. In fact, the consumer today is better informed and more aware of environment and global issues. In the modern society, the general trend is for organisations and nations to globalise and work in a burden less open manner. Geographic, time and culture barriers are no longer issues of concern. People are in a position to communicate with each other across boundaries. They are able to tap talent, expertise and content from a vast reservoir of resources. In education, variation from previous norm is becoming as something to be consciously planned. In addition to all these developments taking place in consumerisation of goods and services, and changes taking place in social and cultural arena, the modern society has varied needs not the least of which is education. Education helps to mould well-informed, knowledgeable and responsible citizens who will be able to contribute to the progress and advancement of the nation. There is the goal of the economic well being of the society. Certainly, activities towards this end must be sustained by technological developments brought about by research and the enormous amounts

of information it makes available to us. In other words, efforts are afoot to evolve into a society, which is modern and which enables us to lead a cultured, prosperous and full life laying emphasis on certain values. It is the collective responsibility of the members of the society to make suitable arrangements for achieving this ideal.

Society during the course of its existence founded different institutions. Educational institutions like schools, colleges and universities, research institutions, cultural organisations, institutions for arts and recreation, business and industrial establishments are but a few examples. In fact, of all the institutions founded by the society *library and its modern cognates* are potent in meeting a variety of needs of different users of modern society.

1.2.1 Role of Libraries in Society

"When thinking of libraries people have many different images in front of them. By stepping back from individual cases and examining the context in which library services are provided and the trends which are likely to affect them in future, it is possible to arrive at some conclusions about how libraries' roles are likely to develop and to start to answer the central question "*do libraries have a central role to play* or *are they in fact simply anachronisms?"* [Brophy, 2007].

Brophy identifies four models in this context. These are:

- libraries as collection;
- the library as an organisation of resource sharing;
- the library as a provider of access; and
- the embedded or immersive library.

If we closely examine the dominant view through most of history has been that libraries were places where written, including printed materials were held together both for security and to create a collection organised for use. The collection was paramount and steps had to be taken to secure its development and representativeness. Also, besides collection, resource organisation became increasingly important. Along side the concepts of collection, the organisation of access to knowledge and the needs of the user as an individual, strengthened the view that the library was a social institution which played a role in the organisation of society. This is considered a progressive view, seeing the public library as a means to spread literacy and love for learning.

The current model of a library is relatively straight forward. The library is the *interface* between the users and the vast amounts of published and unpublished information available. Most libraries place great emphasis on their role in facilitating and supporting learning. The issue for libraries is to provide a range of services which support lifelong learners who choose to learn in any one of the many modes, and probably in a personal mix of all modes. Therefore, there is a considerable challenge for librarians, across most sectors, to develop their direct involvement in the delivery of learning. As a matter of fact, understanding of pedagogical principles will help librarians to be more effective in designing and delivering services and in demonstrating the relevance and importance of library. One thing must be emphasised, libraries are fundamentally service organisations. What they do is intended to benefit people of all ages and backgrounds. They are

quite clearly in the business of helping their users to develop knowledge and understanding. Both, services and knowledge, are firmly at the centre of community development, whether globally or locally. The offering of knowledge - based service and the continuous enhancement of its quality have provided business with an avenue for differentiation from their competitors. But, libraries do not conduct business. They are unique and need to progress in the 21st century empowering themselves to meet the changing needs of the society. The paradigm shifts taking place in libraries to effectively meet the changing needs of the society are indicated in the table1.1.

Table 1.1: The Paradigm Shifts taking place in Libraries

From	To
Custodian of books →	Service oriented information provider
One medium	Multiple media
Own collection	Library without walls
In good time	Just-in-time
In sourcing	Out sourcing
Local reach	Global reach
We go to the library	The library comes to you

Source: Sabarathnam, D. S. Transforming Libraries to Support Chance and Growth. Dempsey, L. et al. *Networking and the Future of Libraries*. London: Library Association, 1995.

There has been a debate in the literature questioning the future of libraries. Some experts express the view that the existence of libraries is under threat. They opine that faced with the challenges of the twenty-first century, the library users will demand *just-in-time* information to help them answer specific questions, address specific problems and strategise. Providing information in good time will no longer be an acceptable norm. The user will want the information made available at the push of a button and in the right form and right format. In order to stay relevant, libraries and librarians must realise this and cater to the new society and demands of knowledge-based economy. Librarians must *re-engineer* the library to serve changing needs and to offer more personalised and customised services. The answer to the question "what is our business?" will help to chart the new course and ensure that libraries stay *relevant and play central role* in the socio-economic development of the country.

1.2.2 Information and its Impact on Society

There has been an informatisation of contemporary society. The whole information environment or *info sphere* is understood to be of growing importance. Even at the untutored level of experience, there is wide spread awareness that information in some ways is effecting a transformation of the social world. All the three realms of society – polity, the economy and the culture are subject to major principles of innovation.

Information and knowledge are deemed to be social wealth. The benefits of this social wealth should be available to all the members of the society. This social wealth is available in a variety of physical forms (e.g. books, periodicals, microfilms, computerised databases, etc.). Ordinary citizens require a variety of information in their daily discharge of duties. Use of information certainly affects their mental growth and brings changes in their outlook as well as lifestyles.

The impact of information and knowledge may be noticed in a number of human activities. Some of these are: education, research and development (R&D), government activities and mass communications, etc. Society itself has undergone significant changes at different periods of human history and information use has been cited as one of the most important agents of this change. Three stages are generally identified in course of societal evolution. They are: the agrarian society, the industrial society and post-industrial society. In all these societal transformations, use of information played a vital role. The emergence of post-industrial society in the 20th century is based on the developments in technologies, and the revolution and processing of information and its subsequent use.

1.3 INFORMATION SOCIETY

It has been often stated that we live in an era of change. But, how can one characterise the deep transformations that come with the accelerated insertion of artificial intelligence and new Information Communication Technologies (ICTs) in our present society? Is it a question of a new stage in the industrial society or are we entering into a new era? *Global village, technotronic era, post-industrial society, information society,* or *information age*, and *knowledge society* are just a few of the terms that have been coined in an attempt to identify and understand the extent of these changes. But, while the debate proceeds in the theoretical sphere, reality races ahead and communication media select the terms that we have to use. It is the case with the term Information Society. In the present decade, the expression *Information Society* has without doubt been confirmed as the hegemonic term, not because it necessarily expresses theoretical clarity but rather due to its baptism by official policies of the more developed countries and the fact that it merited a World Summit dedicated in its honour (2003 in Geneva and 2005 in Tunis). However, let us try to understand the concept and its development.

Self Check Exercise

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

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

1) Explain the role of libraries and information in meeting the requirements of modern society.

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1.3.1 Information Society: Evolution of the Concept

The concept of Information Society emerged during the 1970s and throughout the 1980s and rapidly gained popularity and currency, its proponents ranging from scholars and academic authors to popular writers. Prominent among the first group of writers were Masuda, who in the Japanese context, perceived an eventual transition of the society to the point at which the production of information values became the driving force for the development of the society. The second writer belonging to this group was Tom Stonier, who perceived the dawning of a *new age* for Western Society. He draws explicit parallels and contrasts between industrial and information societies. Although not very comfortable with the term information society, Daniel Bell did much to sustain it through his work on post-industrial society. Daniel Bell, the classical exponent of post-industrialism, also theorised the Information Society (Bell, 1979).

In *The Coming of Post-industrial Society* (1972) Bell argued that the increased part played by science in the productive process, the rise to prominence of professional, scientific and technical groups and the introduction of computer technology, are all the evidence of a new axial principle at the core of the socio economic system, namely, the centrality of theoretical knowledge. The emerging social framework of Information Society builds upon this base. Information increasingly becomes a source of added value and thus of wealth. A growing portion of workers is employed in the information sphere. The important factor, enabling discourse to shift from post - industrialism to Information Society is the massive growth in the economic significance of IT.

Although, in its current form it is something of a novelty, it would be a mistake to think that the idea of Information Society is entirely of recent origin. Alongside the analytical strands of thought about social change, we also find another theme, technological utopianism. In fact, the writings of Masuda, Stonier and Naisbitt depict a new kind of society which on one hand, to empirical analysis but, on the other, is full of good society imagery. Technological utopianism is especially powerful in the USA. It was felt that the USA would realise through marriage of nature and mechanics, an unprecedented solution to the problem of industrialisation, allowing us to transcend the typical evils of industrial society. The ideals of decentralised democracy, community participation, an end to hierarchy and class, and of plenty for all, which inspired an earlier generation of technological utopianism, reappear in the literature of Information Society.

Alvin Toffler and John Naisbitt have done much to popularise the concept of information society. Naisbitt contended that the United States made the transition from an industrial to an information society as early as 1960s and 1970s, and that in this process the computer played a significant role. On the other hand, Toffler talked of an information bomb exploding in our midst and a power shift in society, which will make it depend on knowledge.

The newness and attraction of these ideas and the vigour, with which they were expressed, fired the public imagination and helped to sustain the interest in the concept of the information society and its literature.

1.3.2 Definition and Meaning of Information Society

Information society is a much used expression. The term has been characterised by various dimensions. Several authors have tried to define and interpret this

term according to their own perceptions. What strikes one in reading the voluminous literature on the information society is that "so many writers operate with underdeveloped definitions on their subject. They write copiously about particular features of the information society, but are vague about their operational criteria. Eager to make sense of change in information, they rush to interpret these in terms of different forms of economic production, new form of social interaction, innovative process of production, or whatever. As they do so, they very often fail to set out clearly in what ways and why information is becoming more central today, so critical indeed that it is ushering a new type of society"(Webster, F). One wonders just what is about information that makes so many scholars to think that it is at the core of modern age. Let us try to examine some of the significant definitions provided for the term information society in literature and analyse their main attributes.

According to Branscomb (1986) "it is a society where the majority of people are engaged in creating, gathering, storage, processing or distribution of information".

Manfred Kochen (1987) writes that the simple notion of a society in which information rather than material flows constitute most of its "communication and control" exchanges is extended to stress that:

i) Most members generate knowledge by knowledge-based procedures that are knowledge-intensive;

ii) Information consistently reflects basic social variants;

iii) Reason and human values *rather than strength and expediency* manage conflicts between pressures to conserve invariants and pressure to adoptive change.

Having stated all this, Manfred Kochen adds that "an information society is a stage in the evolution of *community brains,* towards a *world brain!* This is probably most likely to be the essence of the *great transition that* futurists seem to agree on. When enough people begin to believe it as likely to happen, if it is a stage in natural cultural evolution, then this belief may contribute to its self fulfilment. It will take some decades before this idea is sufficiently widespread and until the first information society appears". Ronfeldt (1992) is of the opinion that "*information society* is one which sees the steady blurring of the boundaries, which presently separate computer hardware, communication systems and satellites, global networks and more". While none of the above quoted definitions is wrong, they serve to emphasise the fluidity of present situation, one which suggests that what is likely to emerge – and certainly in short term – *is a series of parallel information societies, between which users switch according to their need.* The convergences these separate structures may, or may not, come according to the type of information society which finally emerges.

Another expert Martin, James (1978) maintains that "the term (information society) has come to represent societies at an advanced post-industrial stage, characterised by high degree of computerisation, large volume of electronic data transmission and an economic profile heavily influenced by the market and employment possibilities of information technology".

The Information Society concept has close affinities with the theory of post-industrial society of Daniel Bell. In The C*oming of Post-Industrial Society* (1973)

Bell argued that the increased part played by science in the productive process, the rise to prominence of professional, scientific and technical groups and the introduction of computer technology are all evidence of a new *axial principle* at the core of the socio economic system, namely, the centrality of theoretical knowledge. The emerging social framework of Information Society builds upon this base. Information increasingly becomes *a source of added value and thus wealth.* A growing portion of workers is *employed in the Information Sphere.*

1.3.3 Factors Determining the Arrival of Information Society

When we use the phrase Information Society, we usually mean society as a whole. The problem is how to distinguish an information society and whether it has arrived. We have but to listen to the commentators and leaders to perceive the signs all around us. The Information Society is a direct consequence of:

- the data explosion;
- the growing information consciousness and information dependence of society at large; and
- accelerating developments in computing and communication technologies.

However, Cawkell (1987) opines that "the pre-requisite for an Information Society is a telecommunication based information service infrastructure, which gradually builds up until at some point a critical mass of terminal users will be connected to a more or less universal network". According to Bell "the term refers mainly to the social structure of the post-industrial society. It describes the characteristics and the structure of the society of which *the driving force will be the production of information values and not material values.* In considering when it will be realised it is necessary to look at the four stages of technological development which have to be achieved:

- science based computerisation, where computer is used extensively in national scale projects;
- management-based computerisation in both government and business;
- society-based computerisation in which computers will be used for the benefit of the society as a whole;
- individual-based computerisation where each individual will have access to the terminal and computer information to solve problems, creativity will flourish in this high mass knowledge creation society.

In other words, the most advanced stage of Information Society appears to be high mass knowledge creation society.

From the above discussion, it may be inferred that a high degree of computerisation, large volumes of electronic data processing and employment of information technology with telecommunication-based information service structure, are the main criteria, that signifies whether a society or nation has become information society or not.

1.3.4 Different Perceptions of Information Society

Even though schemes are possible**,** we may categorise the literature on Information Society into broad groups each group representing a unique perspective. In this

connection, it is worth noting that Webster distinguishes and presents five different perceptions of the Information Society on the basis of technological, economic, occupational, spatial and cultural criteria. Let us try to understand these perceptions of information society.

A) **Technological Perception**

The most common perspective of information society lays emphasis upon spectacular technological innovation. The important idea is that breakthroughs in information processing, storage and transmission have led to the application of information technology (IT) in virtually all the areas of society. Although IT occupies a central role in all the literature on information society, this perspective emphasises the technological infrastructure *to the exclusion of other social, economic and political attributes.* Martin provided a number of scenarios detailing life in the information society specially, the spread of digital networks *as the key element.*

The convergence of computing and telecommunications resulted in the linking of computers enabling the establishment of global networks. The development of ISDN (Integrated Service Digital Network) will provide the infrastructure supporting the key ingredient of post-industrial-society-information. The rapid growth of the Internet appears to bring about precisely this change.

In other words, the technological perspective effectively draws attention to the potential benefits of information technologies for the society.

However, with such emphasis on technology, generally removed from a social, cultural and political context, it is unable to provide adequate foundation for defining the attributes of information society. Also, the problem of measurement, and the associated difficulty of stipulating the point on technological scale, at which a society is judged to have entered an information age, is surely central to any acceptable definition of a distinctly new type of society. It is ignored by popular futurists. The authors of this school of thought are content to describe, in general terms, technological innovations, presuming that this is enough to distinguish the new society. "There are some serious scholars who encounter two problems. First, how does one come to measure the rate of technological diffusion, and, second when does a society cease to being *industrial* and enter into the *information* category?" (Webster, 2003)

B) **Economic Perception**

Some of the authors who write about information society point to the growth of the service sector in the industrialised nations and the decline of employment in manufacturing. For some of the authors, the dominant characteristic of an information society is the nature of its economy. Machlup (1962) initiated this research perspective by analysing the growth of the "knowledge sector" in the US economy. In Machlup's analysis, industries primarily concerned with production and distribution of knowledge (knowledge industries) were examined separately, rather than as a part of the overall service sector. The knowledge industries included such areas as educational system, the media and other communicative activities, libraries and other information activities, and research/institutes. The contribution of

this sector to the Gross National Product (GNP) was found to be significant (estimated at about 40% for the early 1960s) and growing at a rate considerably higher than the industrial sector. Machlup concluded that knowledge industries would soon outpace the industrial sector, leading to the rise of a *knowledge society.* A similar conclusion was reached at about the same time in Japan, as Umaseo (1963) predicted the rise of the *spiritual industries* over material and agricultural sectors in economies that were more developed. These earlier studies distinguished knowledge or information sector from other economic sectors.

The best known and often cited study on the emergence of an information economy conceived on these lines is the report from Marc Porat (1977). Porat initiated much of this work, by broadening the view of information work to apply to more than those jobs falling within the information or knowledge sector as defined by Machlup. Porat began by defining information activities as including all resources consumed in producing, processing, and distributing information goods and services. He defined the primary information sector as including all those businesses involved in the exchange of information goods and services in the market place. In addition, however, Porat noted that a great many jobs in other sectors of economy can be thought of as information work. Nearly, every organisation produces, processes, and distributes information for its own internal consumption. Thus, a secondary information sector includes these information activities. Porat estimated that overall information activities accounted for 45% of the gross national product in1967, and that half of the labour force was employed in information-related work. This study has been used to justify references to United States as an information society. Several authors have attempted to refine Porat's analysis and apply it in other contexts (Komastujaki, 1986, Schement, Lievrouw, and Dordick, 1983). This perspective focuses on the economy as the primary attribute of the information society. It may be stated that examining the economic structure alone provides only a limited view of the social and cultural implications associated with information societies. Also, several critics contend that Porat's classification of information workers is too broad to be meaningful, and does little to suggest social implications of the shift to an information society (Bates, 1985, Wizard, 1984). Bates, for example, has noted that according to Porat, factory workers assembling information transmission equipment are considered information workers; just as are university researchers. This does not appear to be logical.

He felt that such a categorisation may weaken the social distinctiveness of the information sector. There are other types of objections and criticisms on Porat's analysis. However, such objections may not entirely invalidate the findings of Porat and are not intended to do that.

Marc Porat has been able to distinguish two information sectors: primary and secondary, then to consolidate them, and separate out the non-informational elements of the economy. Porat, by re-aggregating national economic statistics, is able to conclude that 46% of the U.S. GNP is accounted for by the information sector. "The United States is now an Information based economy". As such, it is an "Information Society (where) the major arenas of economic activity are information goods and service producers, and the public and private (secondary information sector) bureaucracies".

C) **Occupational Perception**

Another popular measure of the emergence of an information society is the one that focuses on occupational change. The contention is that we have achieved an Information Society when the predominance of occupations is found in information. That is to say, in Information society, the number of people employed in occupations such as teaching, research and development and activities associated with creative industries (media, design, arts) out-numbers those employed in factories. The main characteristic of these people is high level of education. The occupational definition of information society is often combined with an economic measure. Porat calculated that the late 1960's, a little under half of the US labour force was to be found in the information sector. Porat connects the growth of economic significance of information with changing occupational patterns. Most identifiers of an information society draw on occupational changes as indicators of the approach of a new age, which reflects the introduction of new technologies. In other words, the shift in distribution of occupations is at the heart of the theory of the information society.

D) **Spatial Perception**

This perception of the information society has at its core the distinctive stress on space. Here the major emphasis is on the information networks that connect locations and as a result have great effect on the organisation of time and space. This aspect has been considered as an index of information society in recent years. The centrality of information networks linking together locations within and between towns, regions, nations and continents and indeed the entire world, is an important consideration for spatial perspective. In many writings, the technological bases of the information networks is emphasised because these networks provide the infrastructure that enables information to be processed and distributed. These developments may lead to an emerging *networked society.* The salient idea here is of information circulating along electronic *highways.* But, no one has been able to quantify how much and at what rate information must flow along these routes to constitute an information society. Though, no one could deny that information networks are an important feature of modern societies and do facilitate instantaneous communications round the globe, databases can be accessed from any place to any place, still some people would ask "why should the presence of networks lead analysts to categorise societies as information economies?". It may be stated that the question of what constitutes a network is a serious one and raises the problem of how to distinguish different levels of networking as also how we stipulate a point at which we have entered a network/ information Society.

E) **Cultural Perception**

Developments such as invention of radio, television, and computers coupled with the recent advances in telecommunication networks and media technologies are having great impact on the life styles of people as a whole. It is stated that presently we are living in a media-laden society and the informational features of our world are thoroughly penetrative now than in earlier times. In fact, the informational environment is a great deal more intimate and more constitutive of us. For example, the informational

dimensions of the clothes we wear, the styling of hair and faces, the very ways in which we work makes one aware that social intercourse nowadays involves greater degree of informational content than before. According to Webster (1996), "contemporary culture is manifested by more heavily information laden than any of its predecessors. We exist in media-saturated environment that means life is quintessentially about symbolisation, about exchanging and receiving messages about ourselves and others. It is acknowledgement of this explosion of signification many writers conceive of our having entered an Information Society". But no writer attempted to measure this development in quantitative terms and only describe our living in a sea of signs one fuller than at any other epoch. In the other words, "we are surrounded by more and more information and less and less meaning."

Reviewing the different definitions of information society, it emerges that these definitions are underdeveloped or imprecise. Whether it is technological, economic, occupational, spatial or cultural perspectives, we are confronted with highly problematical notions of what constitutes, and how to distinguish, an Information Society. It is essential that we be aware of these difficulties. Though, as a heuristic device, the term Information Society might have some value in helping us to explore and analyse the features of the contemporary world, it can not be accepted by all as a definitive. In other words, though one may acknowledge that information plays a vital role in the contemporary society, one has to remain cautious as regards the information society scenarios and in asserting that information has become the chief distinguishing feature of modern times.

Self Check Exercise

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

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

2) Briefly explain the essence of *Information Society* concept as reflected in the conceptual analysis of literature.

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3) State the attributes of an Information Society.

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4) What are the economic implications of an Information Society?

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F) **United Nations World Summit on the Information Society**

The United Nations and International Telecommunications Union (ITU) hosted the first phase of the World Summit on the Information Society (WSIS) in Geneva during Dec. 10-12, 2003. The summit concluded at its second phase meeting in Tunisia during Nov. 16-18, 2005, its results should be assessed in the light of the question whether a common vision on the future information society emerged that empowers the citizens of those societies of to be the architects of their histories.

One of the goals of the first phase of the WSIS was precisely to develop a common vision of information society. Although a large part of the government delegations and the private sector attributed little importance to this aspect, for many organisations in civil society, *it was dealing with a key issue,* for it was there the controversy regarding its meaning took place, evidencing the clash among projects of society.

In fact, the entire process of debate ended up in two separate approaches, which can be briefly summarised as follows:

In the first approach, to talk about the information society refers *to a new development paradigm* that assigns *technology to a causal role* in the social order, designating it *as the drive of the economic development.* For the developing countries, this discourse implies that the transition towards information society is essentially a matter of time and of political decision to create adequate *empowering conditions.* Something similar occurred with regard to the social sectors affected by the digital gap, which would have to be included via universal access programs. By placing technology at the core of this model, the telecommunications industry is convoked to lead this development; while industry *that produces services and digital content* assumes a hitherto unheard of influence.

The second approach, which contested the first in the Summit process, sustains that the new phase of human development that we are entering into is characterised by the predominance of information, communication, and knowledge in the economy as well as human activities. According to this standpoint, technology is the support *that has unleashed* the acceleration of this process; but it is not a neutral factor, nor is its course *inexorable,* since technological development is guided by *games of interest*

Following this perspective, policies for information society development should *focus on human beings* and *should be conceived* in terms of their

needs and within a *benchmark of human rights and social justice.* The developing countries and the social actors should play a key role in the orientation of that process and the decisions. In other words, for this second approach, what is fundamental is not *information* but *rather society.* While the first approach *refers to data, transmission channels, and storage space,* the second *talks about human beings, cultures, forms or organisation* and communication. The information is determined in terms of society and not the inverse. That is why the campaign for Communication Rights in the Information Society – CRIS – points out in the document on the WSIS, *The Question for Civil Society.* If Civil Society is going to adopt and remove the notion of an information society, it should return to these basic notions, posing the correct questions:

- Who generates and processes information and knowledge? How is it valued?
- How is knowledge spread and distributed? Who are the custodians?
- Who restricts and facilitates the use of knowledge on the part of the people to attain their goals? Who is best and least positioned to take advantage of the knowledge?

G) **Alternate Definitions or Proposals**

The concept of information society, born under the percepts of neo-liberal globalisation, infers that henceforth it will be the *technological revolutions* that will determine the course of development. Social conflicts would be things of the past. For the same reason, this concept is no longer the most appropriate to qualify the new trends in societies, nor much less to describe a counter-hegemonic project society. The present position is that beyond debating the appropriateness of one term or another, what is most important is to contest and de-legitimise any term or definition that reinforces this technocratic conception of society. Therefore, it is better to consider criteria to foment the debate. As a first step, we must welcome the suggestion that any reference to *societies* should be plural, recognising the heterogeneity and diversity of human societies. This also implies reaffirming the interest of each society appropriating technologies for their specific development priorities, and not simply adapting to them in order to be part of a supposed pre-defined Information Society. The second step is to affirm that "any definition that uses the term *society* cannot describe a reality circumscribed to the World Wide Web or ICTs, the Web may be a new social interaction scenario, but this interaction is strictly integrated to the physical world, and the two spheres are mutually transformed. We should back a project of the society where *information is a public good,* and *not a commodity;* communication, a participative and interactive process; knowledge, a shared social construction, not private property; and technologies, a support for it all, without becoming an end in itself". (Burch, 2005).

1.4 KNOWLEDGE SOCIETY

Change is the essence of a growing society. Information and Communication Technologies (ICTs) are seen as the facilitators of change. The current revolution around the importance of information and knowledge is profound. In fact, a new class structure is being created around the wealth of information and knowledge. Nowadays, knowledge has come to be constitutive of the way that we live.

Historically speaking, it is correct to say, to a greater or lesser extent, knowledge has always followed the development of man and mankind. It has been seen as a kind of measurement to the success and achievements of society or mankind. Nevertheless, no society *until the present one* has ever been called or referred to as *knowledge society.* This term developed relatively shortly after the term information society was introduced in the last decades of the 20th century. (Stipanov, 2005). The reason for this might be the technology-related developments which have fundamentally transformed the degree to which knowledge is being integrated into economic activity to the extent that we are witnessing a shift in the very basis of competitive advantage. The expression *knowledge society,* recognisable more as social project than as sign of times, is not without substance. In 1960s the debate on industrial society raised the question whether there can be considered a *paradigm* shift towards a *knowledge-based society*. Some prominent authors already foresaw knowledge as the main indicator in order to displace *labour* and *capital* as the main driving forces of capitalistic development. However, the notion *Knowledge Society* emerged towards the end of the 1990s and is particularly used as an alternative by some in academic circles to the Information Society. UNESCO in particular, has adopted the term *knowledge society*, or its variant, *knowledge societies* within its institutional policies. There has been a great deal of reflection on the issue, which strives to incorporate a more integral conception that is not only related to the economic dimension. For instance, Dr. A.W. Khan, Former Assistant Director General of Communication and Information, UNESCO writes: "Information Society is the building block for *Knowledge Societies,* whereas I see the concept of Information Society as linked to the idea of *technological innovation,* the concept of *Knowledge Societies* includes a dimension of *social, cultural, economical, political* and *institutional transformation,* and a *more pluralistic* and *developmental perspective*…. The concept of k*nowledge societies* is preferable to that of Information Society because it better captures the complexity and dynamism of the changes taking place.…The knowledge in question is important not only for economic growth but also for empowering and developing all sectors of society." (Sally, 2005)

"Today on the political level and also in many scientific disciplines, the assumption that we are already living in a *knowledge-based society* … the vision of a *knowledge-based society* determines at least the perception of the Western Societies" (Krings, 2006).

1.4.1 Definition of Knowledge Society

"The transformation of existing societal structures by *knowledge as a core resource* for economic growth, employment and as a factor of production *constitutes the criteria* for designating advanced modern society as a *Knowledge Society*".

"Such a society, in which knowledge plays a crucial and decisive role, with its entire mechanisms and organisation gives an impetus for new knowledge, ensuring the conditions of its inception and use, which further increases new knowledge, etc. Society is therefore, structured on knowledge, it is simply deeply penetrated so that complete functioning of society, including the entire development and progress, rests on *Knowledge"* (Stipanov, 2005).

In a *knowledge society* the traditional measures of competitiveness such as labour costs, recourse endowments and infrastructure are replaced by new dimensions (indicators) such as patents, research and development (R&D), availability of (or capability to afford) knowledge workers. The emphasis is not on the knowledge anybody has but the knowledge one produces. Knowledge resides exclusively in people. Therefore, it is clear that the greatest wealth of any nation, any society is its people. This is vastly underused resource, which offers the opportunity for any country to make major breakthrough, and catch up with countries presently more developed.

It is necessary to differentiate here between the definitions that aim to characterise an existing or emerging reality from those that express a *vision – a longing or desire for a potential society.* Both are relevant: the former for their contribution to analysis, and the latter because they guide policies. In the first category we shall refer to Manuel Castells, an authority on the subject information society. As for knowledge society, he points: "it is to do with a society in which conditions for generating knowledge and processing information have been substantially changed by a technological revolution focussed on information processing, knowledge generation, and information technologies". Castells opines that Information society places the emphasis on the content of work (the process of collecting, processing, and communicating the necessary information), and *knowledge society* emphasises economic agents, who should be superiorly qualified to exercise their work. With respect to visions, the documents resulting from the WSIS form illustrative examples, as they have emerged from a World process. For instance, the Civil Society Declaration extends its visions to several paragraphs, but essentially says: "We are committed to building information and communication societies that are people-centred, inclusive, and equitable societies, in which everyone can freely create, access, utilise, share and disseminate information and knowledge, so that individuals, communities, and people are empowered to improve their quality of life and to achieve their full potential". Subsequently, the Declaration adds the principles of social, political, and economic justice, as well as full participation and capacity-building of people; it highlights the objectives of the sustainable development, democracy, and gender equality; and it evokes societies where development acts as a setting for fundamental human rights and is oriented to attain a more equitable distribution of resources.

1.4.2 Characteristics of Knowledge Society

There are many components of *Knowledge Society*. First of all, there is a huge quantity of newly created knowledge in all fields continuously expanding and exponentially growing. Statistics are known about the exponential growth of knowledge to the entire past historical period, including all kinds of publications as one of the proofs of the whole process. The situation with the total number of researchers in the world, and the entire research capacity can be compared with past times. Not only the number of literate people, but also that of the educated people has increased enormously in the whole world. To this we need to add new possibilities of informing, communicating and team work which were incomparable and unthinkable earlier. Modern ICT has connected the world on all levels so closely, that the entire globe has become a net from which we can connect practically from any one point to another. The possibilities and the speed of communicating, the transfer of information and knowledge, the acquisition of

new ideas and views, not to mention the experience of it are so incredible that Manuel Castells, rightly calls today's society a *network society.* All this creates conditions for the development of new knowledge and awareness, uninterrupted progress and development. This process is advancing with such speed and dimension, that all those who are not directly or indirectly involved will ultimately stay on the fringes. Knowledge is no more *connected* with an individual; it is today the characteristic of the society as a whole, an interconnected society.

In a perfect knowledge society all people have:

- Open and timely access to information and knowledge;
- The capacity to absorb and interpret information; and
- Avenues and opportunities to use knowledge and decision making and for transformation to higher quality lives.

1.4.3 Establishment of Knowledge-based Society

A careful analysis of the literature available on knowledge society reveals that establishing a *knowledge-based society* is clearly desirable and, looking from the perspective of the imminent future, it may well be the only possible society. "The establishment of such a society is a political process – it requires political decision making and political actions. The process of establishing a *knowledge-based society* would be facilitated if one would define bench marks, indicators providing quantifiable measurements indicating whether we are going in the right direction and how far we have progressed. In fact, the essence of progress is to assure order among changes and preserve changes amid order". (Slaus).

It may be stated that the emergence of knowledge society means an ever increasing demand for a well-educated and skilled workforce across the whole economy. In this connection, it is worth noting that the appointment of the National Knowledge Commission (NKC) by the Government of India has been a step in the right direction. The NKC had been entrusted with the preparation of a *blueprint* for reform of our knowledge related institutions and infrastructure. It has submitted its report that will take us a long way in the knowledge society.

1.4.4 Knowledge-based Economy (KBE)

Most advanced economies have undergone significant structural changes in recent years. One of the key characteristics of the changes is the growing importance of knowledge in all sectors of economic activities. These economies have developed from an agricultural economy in which *land is the key resource,* then to an industrial economy in which *natural resources and labour* are the *main resources,* and now to a *knowledge-based economy (KBE)* in which *knowledge* is the *key resource.* In order to facilitate economic analysis, distinction can be made between different kinds of knowledge which are important in the knowledge-based economy: *know-what, know-why, know-how* and *know-who*. Knowledge is a much broader concept than information, which is generally *know-what,* and *know-why* components of knowledge. These are also the types of knowledge which come closest to being market commodities or economic resources to be fitted into economic production functions. Other types of knowledge – particularly *know-how* and *know-who,* are more of tacit knowledge, which are more difficult to codify and measure (Lundvall and Johnson, 1994).

The term KBE was first coined by the Organisation for Economic Cooperation and Development (OECD) and defined as "economies which are directly based on the production, distribution and use of knowledge and information" (OECD, 1996). The APEC then extended this idea to state that in a KBE "the production, distribution and use of knowledge is the main driver of growth, wealth creation and employment across all industries" (APEC, 2000). While the KBE ideal encompasses concepts like innovation, higher education and R&D, it is broader than this and highlights the importance of knowledge in all aspects of the economy. KBE is also referred to as the *New Economy* or *Modern Economy.* However, in a truly KBE, all sectors have become knowledge-intensive, not just those usually called *high technology.*

While there have been a lot of discussions on the characteristics of a KBE at the international arena, there is so far no internationally agreed framework for measuring a KBE. Different frameworks have been developed by individual countries and international organisations.

To fully understand the working of the KBE, new economic concepts and measures are required which track phenomena beyond conventional market transactions. In general, it was suggested by OECD that improved indicators for the KBE are needed for the following tasks:

- Measuring knowledge inputs;
- Measuring knowledge stocks and flows;
- Measuring knowledge outputs;
- Measuring knowledge networks; and
- Measuring knowledge and learning.

A full account of research conducted by OECD for developing improved indicators for the KBE can be found in the OECD publication "The Knowledge-based Economy", 1996.

The World Bank has recently developed the knowledge assessment methodology and score cards. They have formulated the set of 63 variables as proxies for four areas that they consider essential in the development of knowledge-based economy (KBE). They are:

- Economic and institutional regime to provide incentives for the efficient use of existing and new knowledge and flourishing of entrepreneurship,
- An educated and skilled population to create, share and use knowledge well,
- A dynamic information infrastructure to facilitate the effective communication and processing of information, and
- An effective innovation system of firms, research centres, universities and other organisations.

Each country should develop its own path to sustainable knowledge-based society. Once such a society is established it is assuring prosperity, social cohesion and even happiness, but the way to this goal is not free of dangers and threats.

Developing Countries

As part of economic history, the knowledge era has unfolded with remarkable speed. As a consequence most basic tools for creating and managing wealth has

lagged far behind the need. This is true of most of the developing countries. Knowledge has become the corner stone of wealth creation in a knowledge society. Intellectual capital comprises three primary types of capital: human capital, structural capital and customer capital. Of these human capital is the most important one. Developing countries need to recognise and value its human resources capital and capitalise on it to the task of amassing wealth of knowledge which works for the poor and promotes social equality. The wealth of knowledge will enable the developing countries to emerge as strong economies and become independent of low cost labour increasing productivity as well as incomes. Therefore, it is necessary to open up avenues for knowledge incubation to be supplemented by capacity building support and enabling policy frameworks. These policy frameworks are intended to provide opportunities for people to use the power of knowledge for advancing their growth.

Self Check Exercise

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

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

5) Discuss the important characteristics and features of a knowledge society.

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6) Explain the different kinds of knowledge important in the knowledge-based economy.

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7) Explain what is meant by the term Knowledge-based Economy (KBE) and discuss some of the important indicators that help to measure KBE.

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8) Discuss the steps to be taken by developing nations to progress towards knowledge society and knowledge-based economy.

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1.5 SUMMARY

This Unit commences with the role of libraries in modern society. In this regard, the concept of a modern library and its expected role to suit the changed requirements of the society and the user community is explained. The impact of information on a society and the user community is explained. The impact of information on society is briefly mentioned. The Unit then goes on to describe the concept of information society, its evolution, interpretations and its impact on information profession. The emerging knowledge society, its characteristics, its establishment, the changes taking place in the society in this context are explained in a simple manner so that it can easily be comprehended. It has been emphasised that in a knowledge society it becomes crucial that we have the skills and competencies relating to the selection and use of information. Tacit knowledge (essentially *know-how* and *know-who*) in the form of the skills needed to handle codified knowledge becomes more important than ever. The skills required of humans are those that are complimentary with ICTs and not those which are substitutes.

The concept of Knowledge-based Economy (KBE) and the indicators necessary for its assessment are described and explained. It has been stated that work in the KBE will demand uniquely human (tacit) skills such as conceptual and inter-personal management and communication skills. It has been mentioned that each country should develop its own path to sustainable knowledge-based society. The effort of Government of India in the constitution of National Knowledge Commission has been as a right step. If the Government of India implements the recommendations of the National Knowledge Commission, it would provide right environment to accelerate the establishment of Knowledge Society and transformation of India into a Knowledge-based Economy (KBE).

1.6 ANSWERS TO SELF CHECK EXERCISES

1) Modern Society has various needs such as education, research, cultural advancement, information and other ideological pursuits. It has founded different institutions designed to meet such needs. Libraries are one such prominent institution, which are expected to meet most of these needs. Certainly libraries play an important role in supporting the educational (both formal and non-formal) and research activities of the society.

   In many cases, access to information was, and is, via libraries. Information systems tend to be based on, or geared to, the processing and organisational requirements of institutional information centres. This pattern has, however, begun to change as a result of developments in computing and communication technologies. Technology appears capable of deinstitutionalising information and handing over access to individual, thus cracking the mould of library. The fundamentalists view is that the pace of development in ICTs will *soon make the traditional librarian / information worker obsolete.* It has been remarked that there is no long term future for any library in the form we know it today; libraries as collection of physical artefacts are rapidly becoming obsolescent. Of course, this fundamentalist position however, is rigidly simplistic. The social, cultural and educational function of libraries and information profession is also being challenged. In other words, the library

as the traditional store house of knowledge and the preserve of cultural heritage is caught in the maelstrom of change generated by technological advances. Therefore, as a adaptive reaction, attempts to define the goals of the library are called for. The library profession must revise its service delivery philosophies and operational mechanisms. There is a shift from a passive or reactive to a proactive mode. Naturally, this entails on the part of libraries evaluation exercises, the design and promotion of new systems and facilities, investment of time in user education programmes and acquisition of relevant professional skills and competencies for those already in the field. With the availability of sophisticated information technology valuable professional talents must be directed towards enhancing the image of the library as a dynamic information centre with a wide range of services to offer its users. Efforts should be made to enable users to view the *librarian as valuable professional resource person who can quickly locate the information and materials needed to support their intellectual pursuits in a total spectrum of subject areas.* To meet the changing needs of the clientele, libraries must be more creative and provide access to resources available in other libraries via networking, and electronic resources for those who can not afford home computers or terminals. Of course, library users must be made to understand the difference between information which is freely available, and information which is free.

Although libraries essentially handle information and knowledge, the institutional mechanism to meet the demands of the users in an emerging Knowledge Society has to be expanded by properly organising and operating many of the modern information systems and services. The implementation of the above discussed aspects is essential to meet the changing needs of modern society.

2) A number of scholars, scientists and philosophers have been predicting a revolutionary transformation of modern industrial society. Many causes have been identified and attributed as forming the driving force behind such transformation. However, most people opine that *information* is the defining feature of modern world. We are told that we have entered an information age and are rapidly moving towards "global information economy". Many writers identify an entire new phenomenon called Information Societies – the examples of which are found in the United States, Britain, Japan and Germany.

"Information Society" is a concept which sees the transition of Industrialised Society into one in which information – in its broadest and most diverse forms – is the key driving force.

Two major factors underline the Information Society claims. Firstly, that the society is becoming increasingly centred on information handling, processing, storage and dissemination using micro – electronics – based technologies, made available through the convergence of computer with telecommunications, namely ICT. And secondly, that this shift is reflected in an emerging occupational structure, in which the category of "Information workers" has become predominant. In other words, the Information Society appears as an out come of technological and economic changes.

3) Attributes of Information Society are:

i) Shift from an industrial economy to information economy.

That is to say that in industrial economy *capital* is the strategic resource, while in Information Economy information becomes the strategic resource;

ii) a telecommunication based information service infrastructure;

iii) a high degree of computerisation, large volumes of electronic data transmission and employment of IT;

iv) characterised by the fact that the rapid convenient delivery of needed information is the ordinary state of affairs.

4) Economic implications of Information Society:

Information Society might be characterised by different dimensions. One of these relates to the economic structure. We come across several references in literature to the economic implications of the Information Society.

The state of information in the economy has pervasive effects on the working of economy generally. It has great impacts on those sectors that provide information products and services such as press, television, radio, film … libraries and other information providers.

Machlup initiated studies analysing the growth of *Knowledge Sector* in the US economy. The knowledge industry included such areas as the educational system, the media, and other communication activities, libraries and other information activities and research institutions. Machlup's finding was that the contribution of this sector to the Gross National Product (GNP) was 40% for early 1960s and is growing at a rate which is higher than the industrial sector.

Marc Porat, who continued the research in this direction, enlarged the scope of information work to include all jobs falling within the information or knowledge sector as defined by Machlup. According to Porat information activities included all resources consumed in producing, processing and distributing information goods and services. Porat estimated that these activities amounted for 45% of the GNP in 1967.

In conclusion, it may be emphasised that the contribution of information sector to successful economic function is beyond doubt. However, it is not quite the same as saying that information has become a primary out put of all developed economies. We may say that we are moving towards Information-based Economies, but not wholly dependent on the production, sale and exportation of information goods and services for the preservation of our economic well being.

5) Characteristics of the Knowledge Society

One of the most popular themes discussed in general literature for more than a decade has been that technologically advanced economies are in the process of moving beyond industrial capitalism to information-based economies that will bring profound changes in the form and structure of the economic system.

Economists recognised long ago that the most important resource determining the economic efficiency of any economy, industry, productive process, or house hold, is *information and its effective communication*. The characteristics of information define the state of knowledge that under lies all economic process and decision making structures.

In transformation of social structures – by knowledge *as a core resource* for economic growth, employment, and as factor of production, constitute the *main criteria* for designating a modern society *as a "Knowledge Society"*. In a knowledge society, the traditional measures of competitiveness such as labour costs, resource endowments, and infrastructure get superseded by *new dimensions such as patents, research and development, availability of knowledge workers.* In a perfect knowledge society all people have:

- Open and timely access to information and knowledge;
- The capacity to absorb and interpret information; and
- Avenues and opportunities to use knowledge and decision making and for transformation to higher quality lives.

6) In order to facilitate economic analysis, distinctions can be made between different kinds of knowledge which are important in the Knowledge-based Economy (KBE). They are: *know-what, know-why, know-how and know-who.* Knowledge is a much broader concept than information, which is generally the, *know-what* and *know-why* components of knowledge. These are also the types of knowledge which come closest to being market commodities or economic resources to be fitted into economic production functions. Other types of knowledge – particularly *know-how* and *know-who* – are more *tacit knowledge* and are difficult to codify and measure.

   Learning to master the four kinds of knowledge takes place through different channels. While *know-what* and *know-why* can be obtained through reading books, attending lectures and accessing databases, the other two kinds of knowledge are rooted primarily in practical experience. *Know-how* will typically be learned in situations where an apprentice follows a master and relies upon him as the authority. *Know-who* is learned in social practice and some times in specialised educational environments. It also develops in a day-today dealings with customers, sub-contractors and independent institutes. This is one of the reasons why private firms engage in basic research to acquire access to networks of academic experts crucial for their innovative capability. *Know-who* is socially embedded which can not easily be transformed through formal channels of information.

7) Most of the advanced economies have undergone significant structural changes in the recent years. One of the main characteristics of the changes is the growing importance of the knowledge in all sectors of economic activities. These economies have developed from an agricultural economy in which land is the key resource, then to an industrial economy in which natural resources and labour are the main resources, and now to a Knowledge-based Economy (KBE) in which knowledge is the key resource.

   The term KBE (or some times called New Economy or Modern Economy) results from a fuller recognition of the role of knowledge and technology in

economic growth. Knowledge as embedded in human being (as human capital) and in technology has always been central to economic development. The term KBE was first coined by OECD and defined as "economies which are directly based on the production, distribution and use of knowledge and information" (OECD, 1996). The APEC then extended this idea to state that in a KBE "the production, distribution and use of knowledge is the main driver of growth, wealth creation and employment across all industries" (APEC, 2000). While the KBE ideally encompasses concepts like innovation, higher education and R&D, it is broader than this and highlights the importance of knowledge in all aspects of economy.

To fully comprehend the working of the KBE, new economic concepts and measures are required which track the phenomena beyond conventional market transactions. In general it was suggested that improved indicators for the KBE are needed for the following tasks:

- Measuring knowledge inputs;
- Measuring knowledge stocks and flows;
- Measuring knowledge outputs;
- Measuring knowledge networks; and
- Measuring knowledge and learning.

8) Knowledge exists in the minds of the people and when combined with capital, labour existing knowledge and other inputs, produces goods and services and thus becomes a factor of productivity. This fact has been realised by many developed nations and they have transformed into knowledge-based economies where conventional raw materials and physical labour (Brute – force economy) is being replaced by brain – force economy. Developing nations need to recognise and value its human resources capital and capitalise on it to the task of amassing wealth of knowledge which works for the poor and promotes social equality. The wealth of knowledge in turn will create opportunities for developing countries to emerge from dependence of low cost labour as a source of comparative advantage increasing productivity and incomes. Avenues need to be created for knowledge incubation (growth) to be supplemented by capacity – building support and enabling policy frame works which provide opportunities to people to use power of knowledge for improving their growth.

1.7 KEYWORDS

Information Age : A period predominantly centred on information activities.

Information Channel : Established carriers that disseminate information or knowledge.

Information Economy : Is a philosophy, an attempt to model the national economy with its basis on knowledge and information activities, and which has continued to affect, in important ways, the economic, social, political and cultural life of the nation.

Information Flow : Information transfer through established channels.

Information Industry : Industries involved in the production of information in any physical form.

Information Need : The term "Information Need" refers to that need which library services or materials are intended to satisfy. It is assumed that the consumption of information arises from a need for information.

Information Transfer Process : The movement of information from generation to use with a series of intermediate links that connects each other to form a chain.

Information Work-Force: The term has acquired a wider connotation and includes many groups who are involved in a variety of information related occupations. The OECD categorisation includes: Information producers, Information processors, Information distributors and Information Infrastructure occupations, under this concept …

Infosphere : Is a neologism coined by Luciano Floridi on the basis of biosphere? It denotes the whole informational environment constituted by all informational entities (thus including informational agents as well), their properties, interactions, process and mutual relations. It is an environment comparable to, but different from cyberspace (which is only one of its sub-regions, as it were), since it also includes off-line and analogue spaces of information. It is a concept that is rapidly evolving.

Kinds of Knowledge:

i) *know-what* : Refers to knowledge about *facts* such as How many people live in Delhi? What are the ingredients of pancakes?, When was the battle of Panipat fought?, are some of the examples. Here, knowledge is close to what is normally called as information.

ii) *know-why* : Refers to scientific knowledge of the principles and laws of nature. This kind of knowledge underlies technological development and product and process advances in most industries. The production of this kind of knowledge is often organised in specialised organisations such as research labs, universities, etc.

iii) *know-how* : Refers to skills or capability to do something. Businessmen judging market prospects for a new product or a personnel manager selecting and training staff have to use their know-how.

Know-how is typically a kind of knowledge developed and kept ready with in the border of an individual firm.

iv) *know-who* : Involves information about who knows what and who knows how to do what. It involves the formation of special social relationships which makes it possible to get access to experts and use their knowledge efficiently. This kind of knowledge is internal to the organisation to a higher degree than any other kind of knowledge. It is very important for any modern manager or organisation to have this.

Post-Industrial Society : The thesis propounded by Daniel Bell. The concept emphasises the centrality of theoretical knowledge and the axis around which new technology, economic growth and the ramification of the society will be organised. This axial principle is becoming more and more predominant in advanced industrial societies.

Social Wealth : Wealth available freely to all members of a society.

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