IMPACT OF INFORMATION TECHNOLOGY IN THE ACCUMULATION OF KNOWLEDGE AND COMMUNICATION DURING THE PERIOD OF GLOBALIZATION : A CRITICAL STUDY

Thesis submitted to the
University of Calicut for the award of the Degree of
DOCTOR OF PHILOSOPHY IN PHILOSOPHY

By

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DECLARATION

I, BASKARAN.C, do hereby declare that the thesis entitled "**IMPACT OF INFORMATION TECHNOLOGY IN THE ACCUMULATION OF KNOWLEDGE AND COMMUNICATION DURING THE PERIOD OF GLOBALIZATION : A CRITICAL STUDY**" is submitted to the University of Calicut for the award of the degree of doctor of philosophy in philosophy, is a bonafide record of research work done by me under the supervision and guidance of Dr. P.K. Pokker, Professor of Philosophy, University of Calicut. I also declare that this thesis has not been submitted by me for the award of any degree, diploma, fellowship, associateship or other similar title.

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This is to certify that the thesis entitled "**IMPACT OF INFORMATION TECHNOLOGY IN THE ACCUMULATION OF KNOWLEDGE AND COMMUNICATION DURING THE PERIOD OF GLOBALIZATION : A CRITICAL STUDY**" submitted to the university of Calicut for the award of the degree of doctor of philosophy in philosophy under the faculty of Humanities, is a bonafide research work done by **BASKARAN. C**, Research Scholar, Department of Philosophy. University of Calicut under my supervision and guidance and the thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship, or any other similar title.

Place : Calicut University Campus
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CHAPTER 1
INTRODUCTION

This study is an attempt to understand the dominant role and impact of information and communication technology in the accumulation of knowledge and communication during the period of globalization and it is a philosophical analysis seeking the conceptual domain of the information and communication developments in an information explosion age. The study covers the ontological, epistemological and metaphysical perspectives of both the Western and Indian philosophical system and the conceptual domains of information and communication technology in a scientific and technological information explosion age. The ontological, epistemological and metaphysical queries which lead to the formulation of the nature and problem of knowledge, the truth and reality of knowledge, the range and limits of knowledge and about what happens beyond the limits. There are some issues regarding the nature and problem of knowledge which comprises the subject matter of the ontological, epistemological and metaphysical queries that lead to the information or knowledge. Such an ontological, epistemological and metaphysical queries of philosophical analysis about the truth and reality of knowledge still continues many schools of thought and thinkers even in this scientific and technological information age.

Globalization is the process of increasing aspects of many changes which we are talking can be seen most of the countries in the world. It exhibits features of the unprecedented experiences in the domain of information and communication sectors and the impact of globalization; the world has become now a global village. Due to the increasing advancement of information and communication technology, the present day society has changed as an "information society" which is called as "paperless society" and the present age has changed as "information age" where the information plays a vital and dynamic role in all activities of the individual.

In this paperless information age, there is an increasing need or demand of acquiring knowledge or information in the most efficient and effective way. The traditional method is inadequate and ineffective in providing the specific information of an individual interest. The modern information and communication technology can overcome this complicated problems and difficulties and can provide the information in an efficient and effective way. It is a modern technology which has an everlasting impact in the accumulation of knowledge and communication and it has influenced in different realm of our social life and plays a vital and dynamic role in the advancement of society. Presently this modern technology is influencing in every segment of our social life and now it has become the most powerful tool in the process of the comprehensive growth and development of a nation. The plan of dissertation in detail, as follows.

Objectives of the study

- To explore the dominant role and impact of information technology in the accumulation of knowledge and communication during the period of globalization.
- To analyse the speedy access of information and communication in an information explosion age.
- To analyse the nature and problem of knowledge influencing the epistemological, ontological and metaphysical standpoint.
- To make an evaluation of the relevance of philosophy and education as a way and method to realise and review the knowledge.
- Finally, an analysis of the information, information and communication technology as an eminent resource for the growth and development of society.

Area/Scope of the study

The thesis covers the area of western and Indian Philosophical domain, information science and information technological sphere in the scientific and technological age. It is a philosophical enquiry of seeking the conceptual domain of the information and communication developments in the globalization period.

Limitation

This study is limited to analyse the dominant role and impact of information and communication technology in the domain of information accessing and communication in an information age, a perspective aspects during the period of globalization. The main limitation of this study is that it doesn't locate a particular society or country, as it focuses on textual analysis in a broad theoretical frame.

Methodology

The thesis is a philosophical analysis or study of the impact of information technology in the accumulation of knowledge and communication during the period of globalization. The essential characteristics of the methodology employed in this study is analytical and critical. Descriptive method is applied for establishing the arguments of the study.

Content

The present dissertation is an attempt towards an in-depth study and philosophical analysis of the dominant role and impact of information technology in the accumulation of knowledge and communication, its contribution and limitations during the period of globalization. Since globalization exhibits features of unprecedented experiences in the

information and communication spheres. Globalization is the process of increasing aspects of many changes and the political and economic system gaining strength around the world. Due to the result of globalization, the world has become now a global village. The changes which we are talking about can be seen in most of the countries around the world. As a result market system has become more free, extensive and powerful. The governments control over the market weakened rapidly. Many new sectors came under the purview of market, market as a solution to all the issues facing the economy became a widespread notion. There are many factors to lead the acceleration of the process of globalization.. Some important factors are the following: international organisations and international agreements - World Trade Organisation (WTO), International Monitory Fund (IMF), Multi National Companies (MNCs): Foreign investment, growth of information and communication technology- internet, changes in information and broadcasting TV-mobile phones, progress in transport - jet planes, container ships etc.

The phase after Industrial Revolution saw the strengthening of the capitalist mode of production, new technologies, inventions, new production techniques etc., led to the rapid growth of western countries, colonisation process led these western countries to expand their influence over other countries. The capitalist countries implemented policies which gave maximum freedom to conduct economic transactions for individuals and

institutions. This led to the strengthening of colonial exploitation. The Great depression of 1930's led these capitalist countries to one of its biggest crisis.

To overcome this major crisis, the government imposed restrictions on activities. The Soviet Union which followed a socialist system challenged the dominance of capitalism. To counter this challenge, the capitalist countries started to implement many welfare schemes. With the end of Second World War, the United states emerged as the dominant country overcoming the challenge from European countries in the capitalist system. The 1970's also saw a crisis affecting the nations of the world. The capitalist countries treid to come out of this crisis by strengthening the market system. This led to the widening of liberalisation and privatization. The fall of the Soviet Union led to further strengthening of the dominance of United States. This paved the way for the acceleration of the economic reforms which were initiated to strengthen the market system. The monetary reforms initiated as a part of the economic reforms led to the economic crisis of 2008.

Globalization is made possible through the process of avoiding trade restrictions among countries and opening up the market for all countries. With the impact of globalization foreign direct investment became extensive, trade goods and services across the borders became free from restrictions and regulations, international relationships increased more and more among the countries and it became the interdependence among the countries. The very

speed of progress, the rapid transformation from traditional to modern, social and economic organisational formations, the growth of science and technology etc., are rapidly advanced in the period of globalization in all over the world. Technology transfers among countries were also liberalised and this led to the sudden growth and development of science and technology in all countries. This sudden growth and development of science and modern technology led to the strengthening of quick and better communication in all over the world. By the result of this unpredicable growth and development of science and technology any individual can communicate very speedy and efficiently to anybody in this world in anywhere.

In this globalised scientific and technological age, the quick and easly information processing and servicing is not possible through the traditional and servicing is not possible through the traditional and old method of information transaction. The traditional manual handling of information processing and servicing has become more difficult and complicated. Such an old system of information processing and servicing is very slow and is not the right way to channelise the information handling process. In order to meet these difficulties and problems, modern information and communication technologies and other advanced useful packages have been introduced all over the world.

Today it has become a common place for computer applications in information processing and retrieval. The technological innovations like

networking, internet, e-mail service etc., have made information accessible to the user community, all over the world. Technologies for accessing information sources on internet are changing rapidly. The growth of internet has been global and continuous. The number of users are almost doubling every year.

Information technology is the use of computing power, typed by ability to machines to contain and handle very large amounts of information within comparatively small physical space, coupled with the ability to extend these resources apparently indefinitely through a variety of communication. It is a tool that allows us to access, manipulate, transform, evaluate, use and present information. Information technology has been concerned with the use of computers and communications to gather store, process, retrieve and disseminate information. The technology used for knowledge accumulation includes not only computers but also telecommunications, networks, storage and wide range of other related technology. The term 'information technology' is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several products or services within in economy are associated with the information technology, including computer, hardware, software, electronics, semiconductors, internet, telecom equipments and e-commerce. Information technology is considered to be subject of information and communication technology (ICT). An information technology system (IT

system) is generally an information system, a communication system or more specifically speaking, a computer system - including all hardware, software and peripheral equipment - operated by a limited group of users.

Human beings have been storing, retrieving, manipulating and communicating information since the Sumerians in Mesopotamia developed writings in about 3000BC, but the term information technology in its modern sense first appeared in a 1958 article published in the Hardware Business Review, authors Harrold, H Levit and Thomas L Whisler commented that "the new technology does not yet have a single established name, we shall call it information technology (IT)". Their definition consists of three categories; techniques for processing, the application of statistical and mathematical method to decision making, and the simulation of higher-order thinking through computer programs. Based the storage and processing technologies employed it is possible to distinguish four distinct phases of IT (Information Technology) development.

1. Pre-mechanical (3000 BC - 1450 AD)
2. Mechanical (1450 Ad - 1840 AD)
3. Electro mechanical (1840 Ad - 1940)
4. Electronic (1940 AD - present) This article focusses on the most recent period (electronic)

Information technology has an everlasting impact in the knowledge accessing and exchanging of information into a global village. Technology has already shrunk the world into a global village Information and Communication technology (ICT) is a modern technology that has influenced in different realms of our social life. In this globalised technological age our social life doesn't move forward smoothly without the help of information and communication technology (ICT). In the domain of information accessing and communication, the information and communication technology has an increasing impact during this globalised age. Now it has become the fastest growing technology. It can provide quick and easy access of information to the user community and ensure better and more intensive utilization of information. As this increasing advancement of information and communication technologies, the present society became an information society and the globalised age is transformed as an information age. This is a radical and revolutionary social change.

Information and communication technology medium helps to bring about remarkable change and development in the life of people through the efficient employment of information technology media. We have opportunity to provide lifelong learning to the people through the employment of information technology media. Information on vital and survival needs of the community like health, nutrition, sanitation, housing, population growth, environmental degradation etc., could be encoded on discs and make available

to the people. Simple and clear information and language will be a major force in the society to promote social changes and development. In this connection, it is gratify to recall an observation that "the conviction is that when a people know the facts, they remore apt to make a better life for themselves and be easier to live with than whey they don't (Bloss, Meredith, "Responding to Manifest Needs", Library Journal Vol. 89, NO. 15 (September, 1964), p. 3252)

The winds of information technology are blowing and making some changes in the existing conditions of knowledge acquiring and communication process in this globalized scientific technological age. Information and communication technology provides easy access to wide spectrum of information through computers, networking, CD-ROMs and internet. It influences every segment of our daily life. This trend will increase more and more in coming generations and few can dare to deny it. It has many more wonders in its store to unravel to the human progress in every field of our social life. The increasing development in information and communication technology, our work is becoming more easier to the dissemination of information. It is useful for new services as it increase the speed of retrieval by overcoming distance barriers. When it applies efficiently, it will be given birth to many existing possibilities and opportunities in our social life. The most important achievement of this technology is quick and effective communication. This is not possible through

the former traditional method. This is the most important outcome of this technology. Thus information and communication technology is becoming the forerunner of the information age and information society. This technological developments in information and communication is an essential factor and acceptable for the coming information age and information society.

The current age is called "information age" The present day society is called 'paperless society" where the information plays vital role to all activities of the individual. The present day need is that how speedily and efficiently information could be communicated to the society. Information and communication are two linked terms in the sense that without information, communication is not possible. It modifies the disposition of both the parties who part take in it. That is in this process, two or more people share their experiences which increase the knowledge of both parties. Information and communication in a broad sense of the term includes not merely transfer of information in the conversational sense, but also the expression of feelings, wishes, commands, desires or whatever it may be. It covers both, the use of natural language as well as voluntary or involuntary feelings, emotions, gestures etc. Communication takes place when people send or receive messages of various kinds. When social interactions involves the transmission of meanings through the use of symbols, it is known as communication. Communication is the transmission of information, ideas,

emotions, skills etc. It is the act or process of transmission that is usually called communication.

The term 'communication' is derived from the Latin word 'communis' which means common. When we communicate with someone, we try to establish a certain degree of commonsense by sharing some information, an idea or an attitude. Communication therefore refers to transmission or exchange of information, message etc. The Oxford English dictionary defines communication as "the imparting, conveying or exchanging of ideas and knowledge whether by speech, writing or signs". In the Columbia Encyclopaedia of communication, it is defined as the "the transfer of thoughts and messages, contrasted with transportation of goods and persons". Communication is an activity, a process of transmitting the ideas generated by the human mind, following an event or a fact. It is an essential component, without proper communication, information cannot reach its destination.

Human communication has progressed through four distinct phases. Each phase is associated with a specific form of communication. The first phase began with verbal communication in which the development of language took place. The second phase was the era of written communication. In the third phase the printing era began with Gutternberg and his Bible in 1456 AD. The fourth phase was the age of telecommunications which began with Morse's telegraph and was perpetuated

by Marconi's wireless. Telecommunication was the fastest means among the forms communication until the advent of communication.

In this present paperless world context, there is an increasing need or demand to acquire and utilise information in the most efficient and effective way. The utilization of information depends upon its users. Free and universal access to information is said to be the social right of the individual . Recently access to information has become a fundamental human right. Information acts as the haemoglobin in the development of human society. In this information age, information is considered as the fifth need of man after air, water, food and shelter. The information is valuable only of its retrieved timely and cost effectively. Failure to provide information in time may ultimately casue individuals as well as national waste in many aspects. The availability of information at right time and in the desired form is one of the prime importance in the development of knowledge as well as developmental activities. Human progress has become possible of the existence and awareness of knowledge or information is gained to us from past generations, culture and society and it transform to next generation.

Information or knowledge is defined as the apprehension or consciousness of mind, the accumulated advances of thought, deeds and experiences of people over the past and present and forecast of the future that is available to the society. It is the totality of the ideas conserved human

beings at any point of time. Both information and knowledge is the result of human thinking. It is produced by the intercourse of the sense organs and with the objects through our sensory experiences information gets accumulated in the mind. All kinds of information is a result of synthesis between percepts and concepts. Information may be valid or invalid. It is only a data or a piece of knowledge and only a part of it. It is only a smaller data but knowledge is a wider concept. Knowledge is the accumulated information gained by human beings through experiences, observations, experiments and other means or modes. Information, which is the result of a meaningful response to stimulous when correlated, synthesised and stratified during the course of time becomes knowledge. Knowledge applied and tested over a long period of time by a continuous stream of minds resulting in its acceptance as truth becomes wisdom.

Information or knowledge could be attained if we use an appropriate method of enquiry. When we apply any kind of method, the information gets accumulated through sensory experiences in the mind of an individual. Man always comes into account of new thoughts through interaction with others. Thus information is the knowledge gained by human beings through experiences, observations, experiments and other means. However, information may be abstract or concrete.

Everybody is familiar with information and we know what information is. Information or knowledge is defined as apprehension or consciousness. To

define information is very difficult and let us apply a variety of statements to define information. But we cannot say that any definition of information is universally valid. The word information generally means a message, a signal or a stimulous. In the generic sense information is defined as that which we communicated, distributed or received through any medium of communication. Various authors have defined information in a different ways. Generally information may be defined as "Data of value to decision making". Most of the dictionaries define information as knowledge. It may be knowledge communicated or received concerning a particular fact of a circumstances. On the basis of different definitions, information can be said that data, facts, intelligence, advice or knowledge which can be used, transferred or communicated. Any knowledge gained through communication, research, investigation, study or instruction is information. It is derived from experiences, observations, interactions and reading or any sources. It can be right or wrong, good or bad, organised or unorganised and even related or unrelated. The inherent characteristics of information is that it is alive, it exists only in the human mind and as such, it is both the input and output of human perception. In perceiving the world around as we are constantly acquiring information or knowledge.

Information or knowledge determines everything in our social life. It is the main element to make the decision making process. Without the proper information, we can't take any decision. It decides what is good or bad, right

and wrong, false and valid etc. However, it is the chief component to determine everything. There are some issues concerning the nature and the problem of knowledge. From where do were accumulate it? How do we acquire it? What is the criterion of truth of it? are some of the problem regarding the nature and problem of the knowledge.

This kind of nature and problem of knowledge had been looked as a mystery for a long period. The nature and problem of the knowledge has engaged the attention of thinkers all over the world. Besides the philosophers, thinkers and experts have attempted to solve this problem of knowledge in different ways. In philosophy for a long period of time various schools of thought emphasised different aspects of knowledge such as what is the nature of knowledge? What are the means of acquiring it? What is the criterion of the truth of knowledge? What is the ultimate entity? What is the ultimate reality? Briefly, these are some of the philosophical issues, which comprises the subject matter of the ontological, epistemological and metaphysical queries that lead to the formulation of the nature and problem of the knowledge.

Epistemology, ontology, metaphysics are the branch of philosophy which discuss the nature and problem of knowledge and the nature of knowing, the object of knowledge, the truth and reality of knowledge, the range and limits of knowledge and about what happens beyond those limits.

Many philosophers and many schools of thought in philosophy have ventured to answer those questions. Philosophy emphasises various aspects of knowledge such as the nature of knowledge, the means of acquiring knowledge, the criterion of the truth of knowledge, the absolute reality of knowledge etc. Philosophy is love of wisdom. A philosopher is a lover of knowledge and wisdom and curious to learn more and more about knowledge and it is not satisfied with mere a bits of knowledge of facts. A philosopher has a taste for every sort of knowledge who is curious to learn all aspects of knowledge. He has a definite purpose or objective of having a comprehensive view of things and not simply a bits of knowledge. Philosophy deals with higher knowledge that is the pursuit of truth, wisdom and eternal reality, world vision or to see and understand the whole of reality. It gives a synoptic view of the universe through knowledge and wisdom, a total picture of universe, a synthetic understanding about the world, a synoptic vision and an integrated view of the world, comprehensive and rational account of the nature of reality throughout knowledge and wisdom and man's place in the scheme of things in the world and deal with the issues of the world.

Philosophy has a definite purpose or objective of having a comprehensive view of things. Its aim to bring at a world vision or see and understand the whole of reality. It determines the ends, goals or aims of life. It gives a direction to life, offers a design for living. It directs life and get refined on the basis of experience. Philosophical outlook is the result of life

experiences and life is governed by the light of philosophy. It is a mental activity of thinking about the problem of life of mankind throughout knowledge and wisdom; its nature and purposes; the mind and its occupation, birth, death and phenomenal word; feelings, ideas, values of social life etc.

To the investigation in the pursuit of knowledge the method of philosophy is independent, objective and impartial enquiry. It is based on reason, system and order. Its aim is to bring clarity to the concepts, to test the coherence of theories, and to serve the therapeutic purpose of dissolving those problems which persist only because of linguistic confusion. The objective of philosophy is discovery of truth and to find out ultimate reality, and give more clarity to the concepts. All these philosophical problems such as ontological, epistemological and metaphysical issues have been discussed the different philosophers and various schools of philosophical thought both west and east long years ago. In Indian philosophy it starts from vedic and upanishad period and develops through the different schools of thought and many thinkers. In western philosophy it emerges from early Greek thought and it develops through socractic period, Plato, Aristotle, Scholastic period, medieval age and modern age.

The classical period of Greek thought is to be regarded as the beginning of western philosophy. The early Greek thinkers investigated all aspect of the world problem of human kind. They discussed about the

beginning composition and functioning of the physical world as well as the spiritual nature of the universe. They emphasised the ontological, epistemological and metaphysical aspects of truth and reality of entity. They enquired about the faculty of human reason to understand anything and the nature, truth and knowledge. In this type of investigations they touched and opened up all significant philosophical questions. Thinkers of early Greek period seriously, conducted discussions about the social world and the important realm of human activity, traditional knowledge and metaphysical speculations, ontological stand points and the nature and problem of knowledge. They investigated human reason itself, and the nature of truth, reality and knowledge. They enquired freely into all aspects of the world and human kind. Starting not from religious or mystical principles, but from the belief that human reason is competent on its own account to formulate the right questions and to seek answers to them, concerning every matter of interest or importance of humanity. In doing so they touched almost every major philosophical questions.

Pre-socratic thinkers is to be considered as the beginners of the western philosophy. They emphasized more importance to nature and the ultimate reality of nature and its entities. So they are considered as pure naturalists. About the 6th century B.C. the faculty of reason and its rationalist power began in Greek. At that period the exponent thinkers are Thales, Anaximander, Aneximenus etc. After these eminent thinkers, socratese

developed a new method in philosophical analysis which is known as Socratic method. In this methodology socrates used a kind of conversational method or a discussions of the problem. In this methodology he asked many questions about the issues and to arrive the right knowledge. He discussed that a famous dictum that virtue is knowledge". It means if we have right knowledge the virtue will arrive automatically. Later his this new methodology influenced very much in western philosophical thought.

In a general survey of the views of different schools in western philosophical thought regarding the ontological, epistermological and metaphysical standpoint of knowledge shows that the great Greek philosopher Plato had developed a well organised foundation for the concept of nature and the problem of knowledge. He accepted the conversational method of his master Socratese to arrive the right and valid knowledge. He introduced and familiarised Socrates's thinking into the world through his famous work 'Republic statesman', 'symposium' and 'laws' in a conversational methodology. This is known as "Dialogues" of plato. He introduced the theory of "Ideas" and "Ideal state". Theories of ideas is that realism is the doctrine that universals have their own independent existence in their own rights. Knowledge is attained through reason, it is the same thing as to say that knowledge is available through concepts. This is the view of Plato about ontological, epistemological and metaphysical standpoint of truth and ultimate reality of the entity. He viewed that ideals are universals are the real

originals which can be copied by the perceptible, but no perceptible can even be the original idea. Ideas can be thought but not sensed and percepts can be sensed but not thought. He emphasised the rational knowledge which can be perceived through the faculty of reason. This type of knowledge is achieved through a dialectical process unhindered by sensory perception. In his epistemological standpoint of knowledge, Plato discussed four types of knowledge; conjectural knowledge, practical or sensuous knowledge hypothetical knowledge and rational knowledge.

Plato's great contribution in ontology, epistemology and metaphysics has an everlasting influence and impact in the field of nature and problem of knowledge in philosophical thinking. Under the unforgetful influence and impact of platonic theory, the field of the nature and the problem of knowledge advanced further and developed different schools of thought in western philosophy. So Plato can be called as the forerunner of western ontology, epistemology and metaphysics.

After platonic idealism, Aristotle's realism clutched in western philosophical thought. Among the pioneers of human knowledge, Aristotle was undoubtedly the greatest. His position in the history of philosophy is unique. His influence in philosophy surpassed even that of his master Plato. Though the influence of Plato on Aristotle is great, he doesn't agree with his master in all what he said. The Aristolelian writings are very different from

that of Plato's dialogue. Plato's writing were generally in the form of suggestion or illustration, but Aristotle is definite and clear cut and scientific in explaining the ideas. Plato is imaginative and synthetic. Aristotle is matter of facts and analystic. Aristotle sees more to be process of exact logic. According to him logic is an instrument of acquiring correct and exact knowledge.

Aristotle was a practical and realist thinker who is regarded as a man of encyclopedic wisdom with scientific and logical approach. His logical syllagism is popular in all age. He used both inductive and deductive method to acquire right and valid knowledge. He regarded that both the deduction and induction are necessary in acquiring knowledge. It was his realism with its hard logic, fine analysis, keen observation and a touch of idealism that made him a philosopher and a scientist of all ages. His philosophy is a philosophy of universal interest.

The material formulation of his theories is in the form of existing customs and institutions. According to him forms are not apart from things or objects, but inherent in them; they are not transcendent, but immanent. Form and matter are not separate, but eternally together, matter combines with the form to constitute individual object or things, each individual things moves and changes, grows or evolves under the control and direction of its form. The world of sense, the phenomenal order, is not a mere imitation or shadow

of the real world, it is the real world, form and matter is one, and the true objects of science. By giving this kind of ontological epistemological and metaphysical standpoints, Aristotle gives us a scientific approach or method to perceive real and correct knowledge. He classified and arranged the science as follows (1) Logic (2) Theoretical Sciences (3) practical sciences and (4) productive science. In this forth kind of science knowledge is subordinated to the creation of beauty. Aristotle's 'poetics ' is an investigation of this sphere, it is a part of which is now called esthetics. By touching of all sphere of the knowledge, Aristotle introduced a new scientific approach and methodology to the philosophical analysis. So he has an eternal influence in philosophical investigations.

After the Aristolelian age, western philosophy is influenced some period by two eminent schools of thought, stoicism and Epicureanism. Both these schools of thought are based on moral principles. Stoist hold the view that our life should be controlled by prudence not by emotion, whereas Epicureans believe that the motto of our life is pleasure seeking, pleasure is the ultimate aim of life, it is a kind of hedonism. Both their ontological, epistemological and metaphysical analysis based on this pure moral principles. After the influence of stocism and Epicureanism. there is a period in western philosophy which is known as neoplatonism. The eminent thinker of neoplatonims is plotinus. He accepted Plato's thought as the central point to develop his philosophical analysis. Because it is called neoplatonism.

After this influence of neoplatonism, next stage come to medieval philosophy. Medieval age is the period between Greek thought and modern age. It is the period of AD 6th century to 16th century A.D. In medieval period, the philosophers tried to use philosophy as to make a foundation for religious principles and to establish that the religion is utmost all other thinking. Thus religion controlled and occupied all intellectual field of thinking and movements. So this period is known as dark age. By the influence of these religious dogmatism, the faculty of reason and rational thinking lost its influence.

The thirteenth century was a period of an extra ordinary religious and intellectual movement, it is known by the name of medieval scholasticism. It was a product of universities. During the medieval period a great revival of learning took place which reached its peaks in the intellectual life of the great universities of Bologna, Cambridge, Montpelier, Naples, Oxford, Padua, Paris, Salamanca, Salerno, Toulouse and others. As a matter of fact scholasticism and universities developed step-by-step together, each furthering the growth of the other. Scholastism as a philosophy of life was all comprehensive including moral, social, political, economic and religious issues. Scholaticism had two important features. It assumed that church dogma was infallible and therefore could not be questioned. Then it also tried to clarify dogma by rational explanation to show that dogma was not contrary to reason.

Scholasticism represents an attempt to reconcile faith and reason, Hallenism with clericalism, and bring about a unification of all knowledge. Scholasticism holds knowledge as a three-storied building in which the ground floor is represented by the sciences and the first floor by philosophy. Philosophy collates and correlates the fundamental of sciences and establishes principles of universal application and validity. These two stories represent human reason which must be reconciled and controlled by Divine Reason - Theology. Thus theology represents the third storey of the building of knowledge. All branches of knowledge such as ethics, politics and economics must be in line with and subordinate to theology. St. Thomas Aquinas is the chief exponent of scholasticism. Aquinas is in agreement with central theme of Aristotle's philosophy. In his writings, Aquinas gave a new birth of the conception of Aristotle. It was through him that the Aristolelian philosophy was brought back to European thought. The greatest of the task of reconciliation which Aquinas had to perform was to reconcile the philosophy of Aristotle with the truth of Christian revolution. Aquinas interpreted Aristotle's social, political ideas in accordance with Christian theology. Aristotle holds that the end of man is happiness, which can be realised through the state. But Aquinas holds that supreme happiness, that is salvation can be provided only by Church. If the state is necessary to provide conditions of good life, the Church is necessary to secure him external good. By bringing about reconcilisation between reason and faith, Aquinas

became an authority on medieval thought and his work still prove the backbone of all subsequent catholicism. Aquinas's philosophy in itself is a progressive and assimilative philosophy, a missionary philosophy a philosophy constantly at the service of primary truth. Thus medieval period ontological, epistemological and metaphysical investigations and standpoint is purely based on Christian theology.

In the 16th century AD, modern age began to develop a new methodological movements in intellectual sphere. Francis Bacon is in many respects, a typical representative of the modern spirit. In the 16th century AD, Francis Bacon preferred and advocated the empirical approach to the rational approach with his book 'Novaum Organum'. Bacon had emphasised that empirical and experimental knowledge is worthy of question. He is considered to be the father of the inductive method. According to this method scientific knowledge as of utmost worth. The followers of inductive method like to see nature, nature as it is, make specific observations, accumulate and then generalise about the world inductively. Bacon is opposed to the ancient authorities or traditional method. He concluded that the past has accomplished nothing. He thinks that the fruitlessness of science and philosophy in the past was due to the absence of proper method. The method existed in his time as purely deductive, known Aristolelian syllogism. This is quite useless is discovering something new. We must began in all over again.

Bacon hold the view that, we must device a new way of reaching knowledge, a new instrument or an organ for the mind, a new logic, a novum organum. To attain this, we need a new methodology. Bacon insists that the mind should clear itself of all its false opinions, prejudices or idols. He holds that free our mind of transmitted and inherited prejudices and opinions, do our own thinking. Before we hope to get facts from experience, our mind should be free from all bias and prejudices. Bacon calls these bias and prejudices as idolas or idols and he emphasised the abolition of these idols. Through the abolition of these bias and prejudices we get experimental knowledge. The model of knowledge is natural science, the method is induction, and the goal is the art of invention. We must being work a new and raise or rebuild the sciences, arts and all human knowledge on a firm and solid foundations. All these ideas are characteristically modern, as are also Bacon's supreme self-confidence and optimism.

Bacon's vision of a new social order grounded on science and technology is portrayed in his famous work 'Novum Atlantis". He holds the opinion that, after preparing ourselves subjectivity we can get ready for the objective investigation of nature. The goal of the inductive method consists in the discovery of the forms of things. Bacon meant form, the hidden basis of self manifesting phenomena" and their properties, it may mean the generative nature of things, and the laws, which underline phenomena. Bacon's form means something hidden like the imperceptible atoms, the changes of which

explain all verification in things. It means not as the realists, not abstract forms of idealists. He hold the view that nothing exist in nature besides individual bodies which act according to the fixed laws. This laws he calls the forms. The method of the discovery of forms is called induction. Induction does not consist in simple enumeration, which is a childish procedure. In which we must ascend gradually and in an orderly and methodological way from experience to proposition of higher and higher generally until we finally come to the most general and best defined axioms. Bacon insists that, in the pursuit of knowledge we must combine the experimental and rational faculties. By using this way of thinking, he brings forth a new method of logical thinking of ontological, epistemological and metaphysical standpoint in philosophical analysis.

In the 16th century, Bacon preferred and advocated the empirical approach which was the foundation of modern thinking and many new method of intellectual advancement. He believed that knowledge is power and this knowledge can be attained by sober investigation of nature. By this insistence on the usefulness of knowledge through this new scientific method, Bacon may be considered as the further of pragmatism and modern spirit of enquiry. His this valuable findings deeply influenced very much in modern thinking and many modern philosopher like Rosseau, John Locke, Pestolozzi, Maria Montissori etc and paved the way for new investigations of knowledge acquisition process. Rousseau followed this methodology for developing his

naturalistic approach. The modern thinkers developed their ideological standpoint on the basis of this new methodology. If Bacon will be remembered then he will be remembered for his this new methodology.

Under the great influence of Bacon's new methodology. European intellectual sphere developed more and more. The British political philosopher Thomas Hobbes developed a new scientific methodology in pursuit of knowledge. One important feature of Hobbe's philosophy is his particular methodology. The regularity of this method is that, instead of taking the help of history and empiricism, he took the help of physics and mathematics. The element of physics in the methodology of Hobbes is discoverable in his assertion that everything to be explained in terms of motion. The clarity, precision and simplicity of mechanical explanations appeal to his neat, well-ordered mind.

The acceptance of the mathematical (Method is also accepted by Hobbes). He accepts the excellence of geometry as it reaches absolutely demonstrable complex propositions. The science of geometry teaches how to start from self-evident proposition to reach the final point of providing a hypothesis. It is the science of geometry that teaches how to move step by step in the correct direction with the help of numbers to solve a theorem that in the end become a conclusive proofe. He integrates the element of physics and geometry in his study. The important features of Hobber's methodology

is that the irreducibility of motion and faith in geometry are welded together. His new methodology in pursuit of knowledge is the resolutive compositive method. While the resolutive part is the way tor each the required simple basic propositions, the compositive part is the way to build the complex ones from those. As Manupherson points out that "Hobbes took inspiration from a leading mathematician like Descanters and physicist like Galileo" (C.B. Manypheson (ed.): Leviathan' Introduction, pp 25-26)

Francis Bacon's modern and scientific approach or methodology influenced very much in the intellectual field all over the world. This impact developed more and more and traditional, ontological, metaphysical, epistemological outlook of thinkers transformed in a new way. It paved the way for many changes in the outlooof people and it developed to begin new schools of thought in western philosophy. In a general study of the views of different schools in western philosophy regarding the field of the study of nature and problem of the knowledge shows that there are mainly two schools of thought concerning ontological, epistemological and metaphysical outlook. Rationalists and empiricists are two eminent schools of thought.

Rationalists hold the view that our chief route to knowledge is exercise of reason. It affirms that knowledge is constituted by innate ides or a-priori ideas. The modes or method for the rationalists is mathematics and logic, where the necessary truths are arrived by rational inferences. They

pointed out that the knowledge constitutes of a-priori elements. Methods of mathematics and logic could be utilized for advancing knowledge in any subject. Rene Discartes, Spinoza and Leibuitiz are the chief exponents of the rationalists thinkers.

Descartes is considered to be the father of modern philosophical thought. He tried to interpret the philosophical analysis is based upon the accuracy of mathematics. He tried to develop a new beginning in philosophical analysis and desired to develop a philosophy based upon pure reason and rationalistic analysis. He viewed that the existence of all the real entity is based upon our reasoning and rational power. He attempted to understand the method of mathematics which could be utilised for advancing knowledge in any subject. For him, Knowledge must attain a certitude equal to that of the demonstrations of Arithmetic and Geometry. This knowledge he thought, could be attained if we use an appropriate method of enquiry. He called his own enquiry as "universal Mathematics" in Rule IV of his Regulae. This will be called meta-mathematics today. Such a science according to Discartes, should contain the primary rudiments of human reason, and its province ought to extend to the eliciting of true results in every subject. Later, this mathematics and rationalist approach popularized as Cartesian method in intellectual field of analysis.

The objective or goal of Cartesian methodology was to apply Mathematical method of philosophy with a view to obtaining certitude in

knowledge. As a result of his enquiry, he laid down four broad rules for his self guidance which are the following.

- Never to accept anything as true unless I clearly know it as such
- Descartes believes that errors arise from poorly comprehended experiences or from hastly, groundless and pre-conceived notion. The only remedy, therefore, he thinks lies in resolute refusal to believe that is not clearly and distinctly perceived.
- Divide up each of the difficulties, under examination into as many part as possible and we being with something vague and indefinite and later on, step by step, attain clearness and distinctness.
- Commence with the simplest objects and ascend, step by step to the more complex. The explanation must be ordered and systematic. Here Descartes is in favour of deductive use in philosophical thinking, for he implies that later steps should be clearly deducible from earlier ones.
- In every cause make the enumeration. So complete that I might be assured that nothing was omitted. The complex thing can be understood when we know its (i) several constituent factors separately, clearly and distinctly, and when we (ii) know the order or system in which they are found. Therefore, the first task of philosophy is analytic, the second is synthetic.

Descartes hold the view that experience and experiments cannot give knowledge, only a-priori or innate ideas give us valid knowledge. His famous

dictum cogito Ergo Sum (I think therefore I exist) reveals that my consciousness is the means of revealing myself as something existing in his interactionism, he hold the view that in this nature of reality, there are two kinds of entity existing, mind and body. Thinking is the quality of mind and evolution or motion is the quality of body. Mind doesn't have exist. In space whereas body need space. In this sense Descartes' ontological, epistemological and metaphysical standpoint is a kind of dualism. There is some relationship between mind and body, but we must decide the precise nature of it. He wavers between interactionalism which he seems to suggest and parallelism which follows logically from his absolute dualism.

The relationship between the mind and body problem is derived in western philosophy by the impact and result of Descarte's absolute dualism. Eventhough he couldn't put forward a remedy for this problem Descarte would be remembered always in his rationalistic approach,

After the Cartesian age, the next eminent thinker of rationalism is spinoza who is very much attracted by Descartes thought. He accepted and followed the Cartesian methodology and at the same time tried to give a solution the Descartes absolute dualism by his monism. Spinoza tried to give more clarity and scientific elements to the Descartes's mathematical methodology. He rejected Cartesian dualism and rejected the substantially of mind and body. The mind and body, extension and thought as two of the

many inseparable aspects of a single, all inclusive reality. Mind and body is not two. Reality is infinite everlasting. He called his reality is as substance. Substance is the absolute reality which includes universe and god. Nothing outside exists nothing any cause of it. Giving this ontological, epistemological and metaphysical standpoint, spinoza introduced pantheism. According to this the things or modes have no any existence of their own. God alone is real and all other finite things are suppressed to annulled in the existence of God. Having resemblance with Vedanta philosophy, spinoza introduced monotheism in the west.

Leibnitz is the last spokesman of rationalism. He is considered as the father of German philosophy. He has written many books in epistemology and metaphysics 'Monodology' is the important work of Leibnitz concerning philosophy. Leibnitz held the view that both Descartes and Spinoza failed to explain their concepts regarding the truth and reality of entity. According to him everything in this world is pre-established harmony of God. He says absolute truth and reality of entity is multitude and it has a spiritual characteristics. To present this spiritual characteristics, he introduced the theory of Monodology'. Monads are spiritual atoms. He calls it as soul. Each monad functions as freely, Monads are windoless. In the schedule of monads the highest monads is monad of monads which is god. The fundamental principles of the philosophy of Leibinitz are known as principles of non-contradiction which are as follows; law of continuity law of individuality,

principle of harmony, God the creator of harmony. Having resemblance with Jaina philosophy, Spinoza provides a multitudeness or plurality of spiritual reality of entities.

Concerning the epistemological, Ontological and metaphysical analysis of philosophy in the west, next school of thought was formulated in the name of empiricism, after some years influence of rationalism. The empiricist expounded the idea that all our thought and knowledge about the natural and social worlds are based on what we can apprehend through our sense organs. It affirms that knowledge is constituted by experience. they hold the view that the chief route to knowledge is perception by the using of our five sense organises. they reduced everything to the final test of an individual sensation. They stressed the view that the only way to expand human knowledge is through the experimental and scientific methods of enquiry, reason and rationality as the way of organizing knowledge. John Locke, George Berkely and David Hume are the chief exponents of empiricism.

John Locke is one of the great figures in the history of English political thought. Locke is called the theorist of the Great French Revolution. The force of liberalism of his period had a profound influence on his thought. Like Hobbes, Locke also begins his analysis with the concept of the 'State of Nature'. His state of nature was pre-political rather than pre-social. There prevailed reason and equality and might was not right. His views on man is

summed in his "An Essay Concerning Human Understanding". In this he says, "desire is the spring of all human actions, the object of all human action is to substitute pleasure or pain, all man experiences pleasure and pain; and it is these simple experiences which lies at the basis of all genuine moral notions" (John Locke; "An Essay Concerning Human Understanding" :Edited by A.C.Fraser, 2 vols, Cambridge University (press - 1984).

Knowledge according to Locke consists in perception of the connection and agreement or disagreement and repugnancy of any of ideas. Knowledge depends on the mental power to perceive or apprehend the ideas and not in the mere receptivity of ideas. Knowledge is rational for it consists in seeing the agreement or disagreement between ideas. Further, he confined knowledge to ideas alone without reference to real things.

Locke believed that our mind is a 'Tabularasa'. All minds are identical in structure and the differences found amongst men are the result of education they get or pursuit of knowledge that the differences to be found in the manners and abilities of men is owing more to their education than to anything else. Men are equal and free in the 'State of nature'. They are free to act as they think; but their actions are to be confined to the limits of the law of the nature. The state of nature is governed by the law of nature. Men enjoyed natural rights derived from the natural laws. Locke held that moral rights and duties are intrinsic and prior to law. The state of nature, in which men enjoyed

the rights and acknowledge the duties, is moral and social in character. It is only a pre-political condition. It is not a state of war like the Hobbes's state of nature. It is a state of peace and goodwill, natural assistance and preservation. Locke's state of nature, thus, appears to be reasonable and men enjoyed peace, what disturbed the peace of nature was the egoistic nature of man. The periodical breaches of peace eventually led the man in the state of nature to contract for entry into civil society. In his work 'An Essay Concerning Human Understanding' Locke provides a scientific way of understanding of knowledge.

George Berkely is the second eminent thinker of empiricism. He followed a kind of subjective idealism and at the same time accepted the empiricist method of enquiry of knowing things. He is a critique of abstract ideas and he refuted the distinction between primary qualities and secondary qualities of matter. According to him all our knowledge is derived based up on our subjective ideological observation and the experience of perceiving things. He says what we perceive is to be perceived' (Esse Est percipi). He held the view that there no matter existes, only exists qualities of matter, these qualities cannot be separated as primary qualities and secondary qualities. Berkely has rejected matter on many grounds. Matter is an abstract ideas. According to Locke and Desartes, the primary qualities of extension figure, solidity motion, rest and number are supposed to be really in things and the secondary qualities of colour, heat, cold etc are supposed to be in the

perceiver and not in the things. But obviously the so-called primary qualities are also ideas. Ideas are pure mental. Therefore, even the primary qualities are mental, and hence there is no exists matter. Berkely's idealism is subjective, subjective idealism holds that nature is merely the projection of minds and has no existence of its own. In this sense, Berkely's idealism is subjective, since according to it nothing exists apart from consciousness, then this interpretation would reduce subjective idealism to solipsism, according to that theory all things and other spirits so many states of consciousness of a single individual thinker. Berkely's philosophical analysis system is idealistic, since it teaches that reality consists of spirits and their ideas only. The essence of anything in principle consists of ideas.

Even though the empiricism is began with the work of John Locke, Berkely brought forth it one more step, but it is completed within the work of David Hume. Hume is regarded as the most empirical philosopher. His theory of moral religion is treated as highly significant in contemporary philosophy. His criticism of the ontological and teleological arguments for the existence of God is certainly more lucid and devasing than that of Kant's criticism of rational theology. Hume holds that man is not guided by reason alone. Nature, custom and habits determine human thinking. This natural propensity in man leads him to believe in causal relation, external world, moral principles and God.

Hume is a septic. According to Hume any knowledge in order to be real must have elements corresponding to some impressions. Now if there is something permanent, as the supporter of qualities then it must be either an emotion or some passions. Hume's skepticism lies completely under his rejection of metaphysics. According to him external world is unreal. The so-called self, according to Hume, is nothing but a heap or collection of passing sensations.

Hume points out that there are two kinds of contents of the mind, namely, impressions and their ideas. These are the only perceptions which compose human mind. Impressions and ideas have been divided into simple and complex. The content of our minds is percieveness and experience. He called both these together as impressions and ideas. Our impressions and ideas are, interdepently related. It is the result of some laws and causes. He says everything is he says everything in this world is causally related. It is not intervent in matter, it is inherent in our mind.

After some years influence of rationalism and empiricism in epistemological, Ontological and metaphysical enquiry of knowledge in western philosophy. Kant's philosophy has a vital and significant role. Later his philosophy is popularized as in the name of critical philosophy. In his critical philosophy Kant analyses the dogmatic theory of both rationalism and empiricism. He used to retain all that appeared to be valuable in both

rationalism and empiricism. He says both rationalism and empiricism are right in what they affirm, but wrong in what they deny. Empiricism affirms that knowledge is constituted by experience and rationalism affirms that knowledge is constituted by innate or a-priori ideas. Empiricism is right in as much as it points out that propositions of facts can be derived from experiences. Rationalis is also right in as much it points out that knowledge is constituted of a- priori elements also. Again, empiricism is wrong in as much as it denies the presence of a prior elements involved in knowledge acquisition. In the same, rationalism wrongly denies that sense experience also constitute knowledge acquisition process.

By taking this stand point in his critical philosophy, Kant synthesizes both rationalism and empiricism affirmed and encompares the positive elements involved in rationalism and empiricism. The proper view of Kant is that knowledge begins with the experience, but doesn't necessarily originate from it. As soon as sense-experience registers in impressions on the mind, the mind at once stirred into its own activity into discrete impressions. The ordering activity is discharged by a-priori elements. Knowledge acquiring is a joint venture of sense organs and understanding. But we shall also find in due course that the mind does not remain satisfied with scientific knowledge of phenomena only. It also tries to know the supersensible, and, this is in empirical knowledge. Apart from sense and understanding there is reason which uselessly tries to constitute knowledge. However, the ideas or reasons

are not constative but regulative principle of knowledge. There are a-priori elements in knowledge which are not derived experience and yet which help in increasing empirical knowledge. The central point of Kant lies that a-priori elements serve to increase empirical knowledge. So some elements in knowledge have to be derived from experience. Hence, according to Kant, knowledge begins with sense, proceeds thence to understanding and ends in reason. Understanding has six categories which are space, time, quantity, quality, relation and modality. Understanding takes place through these six categories.

The field of the epistemological, Ontological and metaphysical analysis of the nature and problem of knowledge advanced further under the impact of rationalism, empiricism, Kant's critical philosophy and different school of thought derived such as dailectical materialism, common sense realism, positivism, logical positivism, sense-data theory, phenomenology, social epistemology and theory of mental constructivism etc.

After the deep impact of Kant's critical philosophy, western philosophy is influenced by Hegalian dialectical method. Hegal tried to prove the vagueness idea of the epistemological, ontological and metaphysical analysis of truth and absolute reality of the nature. Hegel's idealism is famous for its dialectical method. It is the thought itself which passes from the abstract to the concrete, from to the fuller ideas. This dialectical process is taking place is

a kind of process like thesis-antithesis-synthesis. Ultimately things are nothing but a system of thoughts. Through this dialectical method Hegal introduces three main concepts which are 'Being' 'Non-Being' and 'Becoming'. Being and non-being are opposed and yet are identical. Being passes into non-being and 'Nothing' (Non-Being) passes into being. The thought of nothing is the thought of emptiness, and emptiness is what pure being is. This passing from Being into no-being or of non-being into Being is known as becoming which is the third category of the entire system of thought constitute of reality.

Hegal's system is known as concrete monism in contrast with spinoza's abstract monism. According to Hegal the knowledge of ultimate reality is possible which is impossible in Kant's critical philosophy. Hegal says reality exists accordance with the reason. "Rational is real, Real is rational" is the view of Hegal about the absolute reality. The conception of 'Geist' (spirit) is the key notion of Hegal. This Hegalian dialectical methodology concept influenced very much in later philosophical analysis in western philosophy.

Karl Marx developed his philosophy under the basic principle of Hegalian dialectical methodology. Even though Marx followed Hegalian methodology, finally discards the absolute reality of Hegal which is ideals and says the view that absolute reality is matter not ideas. Hegal's philosophy is absolute idealism whereas Marx's is absolute materialism is also famous for

its dialectic method. The dialectic method of Hegal is based on the assumption of the identity of thought and things. It is the thought itself which passes from the abstract to the concrete, from the empty to the fuller ideas. Ultimately things are nothing but a system of thoughts. This view of Hegal, Marx discards and says ultimately things or matter are everything not a system of thought.

With the deep impact of Hegalian idealism and Marxian materialism, the 20th century philosophical thought began to develop in many aspects and it advanced into many philosophical trends into particular subject such as the philosophy of science, philosophy of language, philosophy of mind, philosophy of law, philosophy of education, philosophy of politics, philosophy of social relations, philosophy of history etc. This philosophical enquiry paved the way to develop new philosophical systems and thinkers. Among these new philosophical systems and thinkers Heidegger is the most important.

In metaphysical investigation, Heidegger is interested in three things: Dasein (Being-there), Time and Being. Like all other existentialists, Heidegger believes that Science investigates the Being-there, the objective reality, whereas philosophy studies the Being perse. The Being perse is beyond our commonsense experience, it is beyond both the knower and the known. Thus epistemological studies always miss the Being. Being can be

studies only by inwardisation, by self-knowledge. According to Heidegger man finds himself in a world, which is dasein.

The mystery of being cannot be resolved unless we understand mystery of non-Being, that is 'what is' can be known by the conclusion of 'what is'. The being manifested itself by negating the negation. This negative approach to being is remniscient of upanishads approach of 'neti' 'neti' to the ultimate reality. As a matter of fact the conception of nothingness is included in the conception of being. This fact was also emphasised by Hegal when he asserted that pure being is pure nothing. According to Heidegger, the negative judgement is based upon nothingness. Thus nothingness is the source of negation and not vice versa.

Heidegger hold the view that the central problem of the modern age is highly complex world is not ideological but practical. The world peace cannot be accomplished by raising slogans, we require for this purpose individuals who are free, who communicate freely and above all, who respect theirs as well as others personalities. A fortiori the peace is possible if and only if there is peace in each heart; if each man is free from inner conflicts if each can be free from the desire to subject of others to his will. That is why existentialists attach so great importance to the problem of inner conflict. The traditional philosophies do not consider these problems philosophically worth while; but for existentialists these are extremely crucial and fundamental.

The source of modern philosophical issues is the feeling of allienation from world, society as well as self. If we regard the existence and thought desperate, the problems arising out of this severance between reason and existence cannot be solved. These can be resolved in practice only. A true philosophy is not a philosophy of substance but rather a philosophy of existence, a philosophy of immediate experiences. The existentialis philosophy does not have any definite aim because life is being movement and flow which is not mere mechanical change but a creative advance, it is not possible to tie down life to any particular aim. The life cannot be aimless or having an aim but only inauthentic and authentic. An authentic existence is only aim that life has but this is not some future state but a present quality of life. An authentic life can be personal only. The existentialism condemns both historicism and the scientific philosophy.

The epistemological, Ontological and metaphysical enquiry of philosophical analysis about the truth and reality of knowledge still continues many schools of thought and thinkers even in this modern scientific and technological age.

This thesis consists of six chapters, among them the first chapter is an introduction of the thesis. This chapter is used to examine the characteristics of knowledge or information and communication. Information and

communication technology and the various aspects of accumulation of knowledge and communication during the period of globalization.

The second chapter contains an analysis of the problem of knowledge influencing the epistemological, ontological and metaphysical understanding, the various sources or normal modes to acquire knowledge, the origin and development of the theory of knowledge, in it both western and Indian philosophical thought has included.

In the third chapter, it is tried to draw a picture of the relation between philosophy and education as a way and method to realise and review the knowledge, knowledge is the central subject matter of both philosophy and education. Philosophy deals with how knowledge possible, the origin and development of knowledge the nature and problem of knowledge while education concerns how to learn knowledge and what are the method to acquire it.

The fourth chapter contains the main aspects of the vital and dynamic role of information in communication and the comprehensive growth and development of country in an information age. In this chapter, it depicts information is the basic management tool for the national planning and it is the basic resource for science and technological development. It is the basic raw-material for the development and establishment of any firm and is considered as the developmental source in each phase and every walk of life.

The fifth chapter is used to discuss the dominant role and impact of information and communication technology in the accumulation of knowledge and communication in an information age during this globalized age. This chapter shows the development of information and communication technology and its impact in the knowledge accumulation and communication in an information age.

The focus of attention of the last chapter is an analysis and an evolution of information and communication technology plays as a dynamic resource for the comprehensive growth and development of a nation in a globalized information age. In a globalised information age, information and communication technology becomes as a forerunner of the information age and information society. Finally the present thesis aims at the great contribution and some miner demerits of information technology.

The last part of thesis is the conclusion.

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CHAPTER II

NATURE AND PROBLEM OF KNOWLEDGE - INFLUENCING THE EPISTEMOLOGICAL, ONTOLOGICAL AND METAPHYSICAL PERSPECTIVES

The basic purpose of human life is to attain a calm, peaceful and happy life. In order to attain this, true and valid knowledge is an essential factor. Knowledge is the only one means to the attainment of calm, peaceful and happy life. Ignorance is one of the causes of our problematic and unhappy life. It can be removed through valid and correct knowledge. Then, there is a chance to ask some questions regarding these issues. "What is knowledge?" What are the methods or modes of arriving at valid and true knowledge"? Regarding these questions there are a number of answers.

We cannot say exactly what is knowledge. Knowledge may be defined as the accumulated awareness of thoughts, deeds and experiences of people over the past and present and forecast of the future that is available to society. It is the totality of the ideas conserved by human being at any point of time. Men have knowledge only man knows what is true or false throughout the analysis of our true and valid knowledge.

Man's knowledge is a synthesis between percepts and concepts. It is a byproduct of the interaction between sense organs and the external objects. We understand everything about this world through our sense organs. Sense organs is the gate way of our knowledge. In perceiving the world around us, we constantly acquire knowledge as we look into our consciousness. Things are not as they appear to us, what they are in reality, we do not know but we know that our knowledge concerning things in conditioned by our mental mechanism. By thinking about things we already know and by drawing inferences from these propositions. Knowledge arises in experience. It emerges from reflection. It develops through inferences. It exhibits a distinctive structure, we extend some of our knowledge and retain much of our knowledge through memory.

The nature and problem of knowledge had been looked as a mystery for a long period. The problem of knowledge has only engaged the attention of thinkers all over the world. Besides philosophers, thinkers and experts have attempted to solve the nature and problem of knowledge in their own different ways. There is a disagreement regarding the subject matter of the nature and problem of knowledge. Various schools of thought emphasises different aspects of knowledge such as what is the nature of knowledge? "What are the means of acquiring it?" "What is the criterion of the truth of knowledge?". Briefly, these are some of the issues, which comprises the

subject matter of the epistemological queries that lead to the formulation of theory of the knowledge.

Epistemology or theory of knowledge is the branch of philosophy which examines the nature of knowledge, its presuppositions and foundations and also its extend and validity. It is the theory of knowledge especially the critical study of its validity, method and scope, It generally address the questions "what is knowledge?" What are the methods or modes of arriving at knowledge?" "What are the best and most secure ways of acquiring knowledge"? "What is the difference between valid and non-valid knowledge"? "How do we know"? "What do we know"? When we speak of a theory of knowledge, we have, therefore such questions in our mind.

Ontology is the philosophical position that underpins our theoretical assumptions and ideas about existence. It is a science or study of being; specifically a branch of metaphysics relating to nature and relations of being; a particular system according to which problems of the nature of being are investigated. Metaphysics is a branch of philosophy; its primary subject matter is the inquiry in to the ultimate nature of reality. Its primary questions are, what is there, and what is its nature.

Ontology has a philosophical as well as an epistemological aspect. Ontological assumptions frame not only our understanding of reality, but direct our epistemological approach. An epistemological stand point is how

we came to gain knowledge. While the philosophical position addresses social and cultural knowledge discussed here from the standpoint of temporality, the epistemological standpoint describes representational an organisational aspects of cultural and social concepts. An ontology is a formal representation of a set of concepts within a domain and the relationship between those concepts. It is used to reason about the properties of that domain and may be used to define the domain. In theory, an ontology is a formal explicit specification of a shared conceptualization. An ontology provides a shared vocabulary, which can be used to model a domain that is, the type of objects and there exist, and their properties and relations.

Epistemology, metaphysics and ontology discuss the nature and problem of knowledge and nature of knowing, the objects of knowledge, the range and limits of knowing and about what happens beyond those limits.

A theory of knowledge is not a theory only about the nature of knowing and the objects of knowledge; if it has any pretensions to completeness, it must be a theory about the range and limits of knowing, and about what happens beyond those limits. As A.D. Woozely defines "any theory is an answer or set of answers to a question or set of questions; and answers can be helpful either because they are incorrect, or correct but unclear or because the questions promoting them are unclear."[1] (A.D. Woozely, "Theory of Knowledge An Introduction", pp. 9-10).

Many schools of thought and philosophers have ventured to answer those questions. Much of the debate in this field has focused on analysing the nature of knowledge and how it relates to connect notions such as truth, belief and justification. It also deals with the production of knowledge as well as skepticism about different knowledge claims. This issues that surround the general problem of investigating the nature and extend of human knowledge. It is very important to realise from the beginning that epistemology is never undertaken from a naive position. The term epistemology' is introduced by the Scottish philosopher Frederick Ferrier in the 19th century.

1. Normal Modes And Methods of Enquiry of the Acquisition of knowledge

Knowledge could be attained if we use an appropriate method of enquiry to attain knowledge we have to depend on different sources of knowledge. These sources of knowledge is known as sources of valid knowledge or normal modes of knowledge. There are different kinds of sources of valid knowledge,. In this scientific and technological age, information and communication technology is an eminent source of knowledge. It is an inevitable factor to accumulate knowledge and information in this globalized age.

Normal modes of valid knowledge includes;

- Perception

- Inference
- Comparison
- Verbal testimony
- Postulation
- Non perception or non apprehension

Each of these modes or sources has a peculiar characteristic way of conveying knowledge. Each method of knowledge has its own way and sphere of operation without contradicting one another. Perception is the means of immediate cognition. It can be external or internal, the experience of physical objects and the experiences of the mental status. Inference, comparison and postulation which are based on sense perception, are the means of non-perceptual or indirect cognition, known directly by its non-apprehension. Sense perception and the three means of knowledge dependent on our sense organs, it can impart only the knowledge of the sensible facts, but not of the supra sensuous, whereas verbal testimony can convey the knowledge of both the sensible and supra sensible.

Perception

Man's capacity for sensory perception is similar to that of other living creatures. Perception is the primary mode of direct or immediate knowledge of physical entities, facts and mental states. This knowledge is obtained through sense-object contact or interaction.

The objects which are grasped through perceptions is adour, favour, colour, touch and sound, their respective substances, eg: earth, qualities such as number belonging to these substances, movements such as lifting up and the universals inhering in them and their negation.

Knowledge received, through, olfactory, gustatory and factual receptors are the knowledge of colours, tastes, smells, sounds and skin sensations include the modes of perception. Perception may be external or internal. Perception by any of the five sensory organs is external. Mental perception of knowledge such as hunger, pain, pleasure, love, hate, ignorance etc. are internal.

The term perception has the following connotations.

- Way of conceiving something
- The process of perceiving
- Knowledge gained by perceiving
- Sensing, perception becoming aware of something via the sense organs.
- Perception, the representation of what is perceived is a basic component in the formulation of a concept.

All the system of Indian Philosophical school of thought accepts perception as a normal mode or valid source of knowledge.

Inference

Inference is the next kind of valid sources of knowledge. Except the Carvaka, all other system of Indian philosophy hold that inference (Anumana) is a distinct means of knowledge. Inference is defined as that cognition which presupposes some other cognition. It is medicate and indirect and arises through a 'mark', 'the middle term' (linga or hetu) which is invariably connected with the 'major term' (sadhya). It is a kind of knowledge (mana) which arises after (anu) other knowledge. Invariable concomitance (vyapti or avinabhava vaniyama) is the nerve of inference. The invariable association of the middle term with the major term is called vyapti. Vyapti implies a correlation between two factors of which one is pervaded (Vyapta) and the other pervades (Vyapaka). Vyapti is an invariable to the middle term and the major term.

The knowledge of Pakshadharmata as qualified by Vyapti is called Paramarsha, ie the knowledge of the presence of the major term in the minor term through the middle term which resides in the minor term (pakshadharmata) and is invariably associated with the major term (Vyapati).

Like the Aristotelian syllogism, the Indian inference has three terms. The major, the minor, and the middle are here called sadhya, paskha and linga or hetu respectively. We know smoke is invariably associated with fire (Vyapati) and if we see smoke in a hill we conclude that there must be fire in

that hill. Hill is the minor term; fire is the major term; smoke is the middle term.

Indian logic doesn't separate deduction from induction. Inferences is a complex process involving both. There are five members in Nyaya Syllogism.

1. This hill has fire (proposition or pratijna).
2. Because it has fir (reason or hetu).
3. Whatever has smoke has fire, eg: an even (example or udhaharana).
4. This hill has some smoke which is invariably associated with fire (upanaya or the application of the universals concomitance to the present case or upamana).
5. Therefore this hill has fore (nigamana or conclusion drawn from the preceding preposition).

The Naya Syllogism has five terms. Among them, middle term works as a bridge between the major term and the minor term. Indian logic a fallacy is called hetv¡bhasa. It means that middle term appears to be a reason but is not a valid reason.

Comparison

The third kind of valid sources of knowledge is comparison or upamana. In Indian epistemological systems, the Nyaya, the Mimamsa and

the Advaita Vedanta accept comparison as an independent source of knowledge. The other Indian epistemological systems doesn't accept comparison as a distinct means of knowledge. Vaisesika and Samkhya reduced it into inference. They viewed that is an another form of inference. So it doesn't consider inference is an independent means of knowledge. In this valid cognition inference is the means by which we gain the knowledge of a previously unknown objet on the basis of similarity to another object previously well known.

This valid cognition is known as upamiti and its means is called upamana. It is the knowledge derived from comparison (upamana) and roughly corresponds to analogy. It has been defined as the knowledge of the relation between a word and its denotation. It is produced by the knowledge of resemblance or similarity. Comparison (upamana) is just the knowledge of the relation of a name and the object denoted by the name.

Verbal Testimony

The fourth kind of valid source of knowledge is verbal testimony or sabda. It is a distinct means of knowledge. The Carvaka system rejects it as a pramana or a valid source of knowledge. Verbal testimony consists of words (sabda) so far as a word is heard through our ears, it is perceived. Knowledge of a word is therefore knowledge through perception and is quite valid. But

the Carvaka points out that when the words suggest us knowledge of unperceived objects, then they are not free from error and doubts.

Verbal testimony or sabda is defined as statement of trustworthy person (aptavakya) and consists in understanding its meaning. Etymologically 'sabda' signified sound (dhavani), literally it stands for 'word' (pada) and etymologically it refers to a source of knowledge, namely verbal testimony. A word is a potent symbol which signifies an object and a sentence is a collection of words. But a sentence in order to be intelligible must conform to certain conditions. The word of sentence are interrelated and stand in need of one another in order to express a complete sense. A mere aggregate of unrelated words will not make a logical sentence. It will be sheer non sense, eg. 'cow, horse man elephant', water the plants with fire', is a contradictory sentence. The word should possesses fitness to convey the sense and should not contradict the meaning. There should be the close proximity of the words to one another. The words must be spoken in quick succession without long intervals. Eg: If the words 'bring' 'a' and 'cow' are uttered a long intervals, they would not make logical sentence.

Leaving aside the Carvaka, Vaisesika and the Buddhist, all the other systems of Indian Philosophy accept verbal testimony or Sabdha as a distinct source of knowledge.

Postulation or Implement

Postulation or implement (Arthapathy) is the fifth kind of valid source of knowledge. Prabhakara Mimamsa system admits this as a valid pramana or source of knowledge. Nyaya system only accepts four pramanas namely perception, inference, comparison and verbal testimony. They reduced postulation or arthapathy into inference.

Postulation is a peculiar kind of pramana or source of knowledge in this pramana, the knower assumes a fact through the analysis of an unknown fact from a known fact. Eg: A man is fasting in all day, but he is becoming fatty day by day. This implies that he is eating food in night. Otherwise he does not fat. This type of knowledge we get from the application of implement.

Non-Apprehension or Non-perception

Non-apprehension is the sixth valid source of knowledge. It is an independent source of knowledge. In Indian theory of knowledge it is known as abhava. Mimamsa school of epistemology only accepts this as a pramana. All the other system of Indian theory of knowledge discards, this as a valid source of knowledge. In this source of knowledge we cognize the knowledge in the absence (abhava) of a thing. Absence or non-existence cannot be apprehended by perception. Eg: When we say 'there is no jar in this place". The absence or non existence of the jar cannot be apprehended by perception

or any other valid cognition. Non-apprehension is perceived to be only the means of cognition of non-existence.

Purva-Mimamsa accepts the first five valid pramanas namely perception, inference, comparison verbal testimony and postulation or implement. Uttara-Mimamsa accepts these five pramanas and also the last one non-apprehension or non-perception.

Inference, comparison and postulation are based on sense perception and is direct or immediate. Non-apprehension and verbal testimony as means of valid knowledge have special characteristics. Non-apprehension is considered to be the only means of cognition of non-existence while verbal testimony has the unique property to communicate the knowledge of the sensible as well as the supra sensible.

Eventhough, the disagreement between the different schools of thought concerning the valid sources of knowledge, each of these valid sources of knowledge gives us different kinds of knowledge, we can depend all these sources to attain true and correct knowledge. By using our sense organses, we attain knowledge from these different sources. In this modern scientific and technological age, information and communication technology is also an eminent and powerful source of knowledge. Most of the people are depending now this new source of knowledge. It gives easy method of knowledge acquisition.

2. Origin and Development of the Nature and Problem of Knowledge in Western and Indian Philosophical Systems

The origin of western theory of knowledge or epistemology starts from the early Greek thought. The classical period of Greek is to be regarded as the beginning of western philosophy. The early Greek thinkers investigated all aspects of the world and the problem of human kind. They discussed about the beginning composition and functioning of the physical world and as well as the spiritual nature of the universe. They enquired about the faculty of human reason to understand anything and the nature, truth and knowledge. In this type of investigation they touched and opened up all significant philosophical questions. Thinkers of early Greek period seriously concluded discussions about the social world and the important realm of human activity, traditional knowledge and metaphysical speculations, ontological standpoints and the nature and problem of the knowledge.

The Geeks of the classical period is credited with the beginning of western philosophy. They enquired freely into all aspects of the world and human kind, starting not from religious or mystical principles, but from the belief that human reason is competent on its own account to formulate the right questions and to seek answers to them, concerning every matter of interest or importance of humanity.

The Greeks speculated about the origins, composition and functioning of the physical universe. They discussed the ethical and political circumstances of mankind and proposed views about their best arrangement. They investigated human reason itself, and the nature of truth and knowledge. In doing so they touched almost every major philosophical questions and their legacy to subsequent thought in vast.

For a very long period-roughly from the fourth to the seventeenth centuries AD - thought in the west was dominated by Christianity. This doesn't mean that there was no philosophy; far from it, but much of it served theology, or atleast it was constrained by theological considerations. In the seventeenth century, as a result of the complex event which for convenience are collected under the lables 'Renaissance' and 'Reformation' which took place during the preceding centuries, there occured a powerful renewal of philosophical enquiry. It was connected with the rise of modern science, and began by asking fundamentally important questions about the nature of knowledge. This same freedom of thought prompted the renewal of debate about moral and political questions also.

The age of enlightenment revolutionized the study of human society and relations and also the basic frame work by which individuals understood what was scientific. In fact social sciences came forth from the moral philosophy of the time and was influenced by the Age of Revolution such as

Industrial Revolution and French Revolution. The enlightenment thin thought laid the ground work for the development of social sciences, in the form of social scientific thought. They opened up significant areas of enquiry by asking questions about how and why societies had come to be as they were and about the social and historical conditions that prevailed.

The European Enlightenment of the 18th century paved the way for new ways of thinking about societies and human relations, which provided the foundation for the development of scientific and rational approaches. The enlightenment refers to a period of European intellectual history that had its beginnings in the early years of 18th century and was largely over by the same century itself. The enlightenment thinkers seriously discussed the social world which was seen as a specific and important realm of human activity. They gave importance to individualism and toleration and stood for freedom from traditional constraints on belief, expression, social interaction etc. They upheld the concept of secularism as an opposition to traditional religious knowledge and metaphysical speculations. There was a general enthusiasm for technological and medical progress. A desire for political changes and reforms was visible. There was a general belief in the pre-eminence of empirical and materialist knowledge to know the ways in which society operate.

The intellectual revolution that took place during the enlightenment period had already prepared the background for this diversification.

Following the separation of scientific knowledge from theological constraints there was a phenomenal expansion in the productivity of knowledge creation. The handful universities across Europe in existence at the time of enlightenment expanded their missions by the beginning of the 19th century with the natural sciences of physics, chemistry and biology and later the applied discipline of engineering when they came to the forefront of academic studies, theology was relegated to the sub-section of philosophy.

With the development of core subjects, several new disciplines began to emerge within the broad frame work of the social sciences like that of anthropology, education, law, linguistics, psychology, geography, demography etc. In the course of time the major disciplines in the social science underwent further diversification and resulted in a proliferation of new academic disciplines like that of business studies, communication studies, developmental studies, criminology, international relations, industrial relations, media studies, public administration library science, archaeology, information sciences etc. Though all these disciplines demarcated themselves from one another, they all have something in common that all these disciplines study human society, of course it's different aspects. The diversified disciplines of social science emphasise the study of certain aspects of human behaviours, social relations and the relation with the environment. These disciplines borrowed from each other to substantiate the aspects with which they are related.

Though the social sciences had emerged in the 19th century Europe, its historical roots could be seen in ancient philosophy. There was no difference between mathematics and the study of history, poetry and politics in the ancient period. According to certain view of recent intellectual history, one can see philosophy as having given birth in the seventeenth century to natural science, in the eighteenth century to psychology, and in the nineteenth century to sociology and linguistics; which in the twentieth century it has played a large part in the development of computer science, cognitive science, and research into artificial intelligence. No doubt this over simplifies the role of philosophical reflection, but it doesn't much exaggerate it, because in effect philosophy consists inquiry into anything not yet well enough understood to constitute a self-standing branch of knowledge. When the right questions and the right methods for answering them have been identified, the field of inquiry in question becomes an independent pursuit.

Philosophy accordingly remains a pursuit which-to put the point as a seeming paradox-tries to bring itself to end either by solving its problems or by finding ways of transforming them in to special inquiries like physics, psychology or history. On the 'divide and conquer' principles, the systematic study of enquiry philosophy has come organise itself into fields of philosophical inquiry; ethics, political philosophy and logic are come more or less self explanatory as to their subject-matter, while epistemology and metaphysics need more explanation of first mention. There are also

philosophical inquires into particular subjects - the philosophy of science, the philosophy of law, the philosophy of history and so fourth-in which philosophers reflect on the assumptions, methods aims and claims of the special pursuit.

Philosophical investigation into the assumptions, claims, concepts and methods of science raises questions of great philosophical importance. The elementary part of this enquiry is called methodology, focuses largely on quesitons aout the concepts and methods used in investigating the physical world. The philosophers of the modern period who have done so much to shape philosophical discussion since their day are Descartes, Spinoza, Leibniz, Locke, Hume and Kant.

Even a general survey of the views of different schools in western philosophy regarding the problem of knowledge shows that the great Greek philosopher Plato developed a well organized foundation for the theory of knowledge. Plato's great contribution in epistemology, ontology and metaphysics has an everlasting influence and impact in the field of the study of nature and problem of knowledge. Under the impact and influence of Platonic theory the field of the nature and problem of knowledge advanced further and developed different school of thought in western philosophy. So Plato can be called the forerunner of western epistemology, ontology and metaphysics.

Plato has discussed the following four types of knowledge in his epistemology:

- Conjectual knowledge
- Practical or sensuous knowledge
- Hypothetical knowledge
- Rational knowledge

Conjectual knowledge is a kind of lowest type of knowledge. It includes illusions, hallucinations dreams and pathological experiences. It is never actual, but always possible, it influences people. This type of knowledge can be compared to pratibasika knowledge of Sankara Vedanta.

The second kind of knowledge is practical or sensual knowledge. Throughout different sense organs we receive this type of knowledge. Thus our knowledge of things is practical knowledge.

Hypothetical knowledge is the third kind of knowledge. In this type of knowledge we arrive at certain conclusions through the process of inductive generalisations and logical deductions. It includes the knowledge of numbers and forms as found in different branches of mathematics.

The fourth kind of knowledge is rational knowledge. The rational insight gives us knowledge of forms, concepts or ideas. It is achieved through a dialectical process unhindered by sensory perceptions. It is not subject to

sensory knowledge. Therefore, it doesn't give us knowledge of things. It is not a knowledge of particulars but a knowledge of universals, but so far as each of object part takes in a certain universal, the knowledge of universal gives some knowledge of the object. This field of knowledge is the basis of Plato's theory of ideas. Ideas can be thought but not sensed, and percepts can be sensed, and percepts can be sensed but not thought.

In Platonic epistemology rationalist insight is the highest form of knowledge. Thus Plato can be considered as the forerunner of rationalist philosophy in the west.

In western philosophy the study of the nature of knowledge began with the early Greek civilization with the contribution coming from Pythagoras, Socrates, Plato, Aristotle, Archimedes and other philosophers. Based on this foundation, the field of study of the nature and problem of knowledge advanced further under the impact of Renaissance and industrial Revolution. It is in this milieu, that such school of thought rationalism, empiricism, materialism got firm established. It is around these fundamental concepts the modern epistemology in the west developed branching out into new lines which include common sense realism, positivism, logical positivism, sense-data theory, phenomenology social epistemology and theory of mental constructivism.

In a general survey of the views of different schools in western philosophy regarding the field of the study of nature of knowledge shows that there are mainly two epistemologists, viz, the rationalists and empiricists.

Rationalists hold the view that our chief route to knowledge is exercise of reason. It affirms that knowledge is constituted by innate or a priori ideas. The modes or method for the rationalists is mathematics and logic, where the necessary truths are arrived by rational inferences. They point out that knowledge constitutes of a - priori elements. Methods of mathematics could be utilized for advancing knowledge in any subject. Rene Descartes, Spinoza and Leibnitz are the chief exponents of the rationalist thinkers. Having resemblance with Vedanta philosophy Descartes introduced monotheism in western philosophical system.

Empiricism affirms that knowledge is constituted by experience. They hold the view that the chief route to knowledge is perception by the using of our five sense organs. They reduced everything to the final test of an individual sensation. The empiricist expounded the idea that all our thought and knowledge about the natural and social worlds are based on what we can apprehend. through our senses. They stressed that the only way to expand human knowledge is through experimental and scientific methods, reason and rationality as the way of organizing knowledge. John Lock, George Berkely and David Hume are the chief exponents of empiricism.

After a long years influence of rationalism and empiricism in the field of the nature and problem of knowledge, Kant's critical philosophy has a vital and significant role. In his critical philosophy, Kant analyses the dogmatic theory of rationalism and empiricism. He used to retain all that appeared to be valuable in both rationalism and empiricism. Kant says both rationalism and empiricism are right in what they affirm, but wrong in what they deny. Empiricism affirms that knowledge in constituted by experience, and rationalism affirms that knowledge is constituted by innate ideas or a priori ideas. Empiricism is right is as much as it points out that propositions of facts can be derived from experience. But rationalism is also right in as much it points out that knowledge is constituted of a-priori elements also. Empiricism is wrong in as much as it denies the presence of a-priori elements involved in knowledge. In the same way rationalism wrongly denies that sense-experience also constitute knowledge.

In his critical philosophy, Kant synthesizes both rationalism and empiricism affirmed and encompasses the positive elements involved in rationalism and empiricism. The proper view of Kant is that knowledge begins with experience, but doesn't necessarily originate from it. As soon as sense experience registers in impressions on the mind, the mind at once stirred into its own activity and contribute its own ordering activity into discrete impressions. The ordering activity is discharged by a-priori elements. Knowledge properly is a joint venture of sense and understanding. There are

a-priori elements in knowledge which are not derived from experience and yet which help in increasing empirical knowledge. The central point of Kant lies that a-priori elements serve to increase empirical knowledge. So some elements in knowledge have to be derived from experience.

The field of the nature and problem of knowledge advanced further under the impact of rationalism, empiricism and Kant's critical philosophy and different kinds of school of thought derived such as materialism, common sense realism positivism, logical positivism, sense-data theory, phenomenology, social epistemology and theory of mental constructivism etc.

3. Different Perspectives and Aspects of Knowledge in Indian Philosophical Systems

It may be regarded that the discussion about the knowledge in Indian Philosophy started at first in Vedas and unpanisads. All the early philosophical system developed based on the authority of Vedas and upanishads. The Indian philosophy has been primarily divided into two groups known as orthodox (astika) and hetrodox (nasktika). The former has six systems namely, Nyaya, Vaisesika, Samkya, Yoga, Mimamsa and Vedanta and the latter comprises three systems known as Carvaka, Buddha and Jaina. Each of these school of thought has to some extent, devised its own method of knowing, but inspite of some underlying principles (for

instance holding worldly objects as capable of being cognized) render all the systems or schools initially or basically least some extent.

The chief topic of Indian epistemology or theory of knowledge discusses about the valid sources of knowledge. Knowledge of reality or valid cognition is called prama and sources such knowledge called pramana. In Indian philosophy, though different systems have adopted divergent attitude towards the problem of knowledge or theory of knowledge, yet even the materialist Carvakas attempted to analyse knowledge and its means in their own way and thus obviously are of the view that the problem is not beyond solution.

Considering the nature and the problem of knowledge these are six valid sources of knowledge accepted by the different schools of Indian philosophy. They are the following.

- Perception (Pratyaksha)
- Inference (Anumana)
- Comparison (Upamana)
- Verbal testimony (Sabda)
- Postulation or implement (Arthapathi)
- Non-apprehension or Non-perception (Abhava)

Among these sources of valid knowledge Carvaka school holds that perception is the only pramana or independable source of knowledge. For

establishing this position Carvaka criticises the possibility of all other sources of knowledge which are regarded as valid pramanas by many other school of Indian philosophy.

The validity of inference is totally rejected by Carvaka. If inference is to be regarded as a pramana, it must yield knowledge about we can have no doubt and which must be true to reality. But inference cannot fulfill these conditions, though some inference may turn out to be accidently true. We infere the existence of fire in a mountain from the perception of smoke in it. We take a leap in the dark from the perceived smoke to the unpreceded fire.

It is a fact that sometimes our inference comes and leads to successful results. But sometimes it also leads to error. Truth is an accident and a separable one that we find only in some inference. So that Carvaka school concludes inference cannot be regarded as a pramana or a sure source of valid cognition. The Carvaka again strongly rejects the testimony as a pramana or valid source of knowledge. Testimony consists of words (Sabdha). So far as words are heard through our ears, they are perceived. Knowledge of words is, therefore knowledge through perception and is quite valid. But the Carvaka points when the words suggest us knowledge of unperceived objects, then they are not free from error and doubt. They strongly rejects the authority of vedas. They point out that in reality, the Vedas are the words some cunning priests who earned their living by the dupling the ignorant people. With false

hopes and promises the Vedas persuade men to perform Vedic rites and the benefit only goes to the priest.

Some Indian philosophers like Mimamsakas believe that the goal of human life is heaven (svarga). The Carvaka school rejects this view, because it is based on the unprove existence of a life after death. "Heaven and hell" are the inventions of the priests whose professional interest lies in coaxing, threatening and making people perform their rituals.

Many other Indian philosophical systems regard liberation as the highest goal of human life. Some think that it can be attained only after death, when the soul is free from the body; and others believe that it can be attained even in this life. But the Carvaka holds that none of these stands to reason. If liberation is freedom of the soul from its bondage to physical existence, it is absurd because there is no soul. But if liberation means the attainment of a state from all pain, in this very life, it is also an impossible ideal. Existence in this body is bound up with pleasure as well as pain. We can only try to minimise pain and enjoys as much pleasure as we can the goal of human life is, therefore to attain the maximum amount of pleasure in this life, avoiding pain as far as possible. A good life is life of maximum enjoyment. So Carvaka ethics may be called, therefore hedonism or the theory that pleasure is the highest goal of human life.

Critique of inference (anumana), critique of verbal testimony (sabdha), rejection of non-material elements like God, soul, heaven, hell, life before death after death, Carvaka school of thought became a pure materialistic school of thought in Indian philosophy. They held the view that non-material elements cannot be perceived through perception. They are beyond the cognition of perception.

Carvakas's position or standpoint is severely criticised by all other system of Indian philosophy. The other Indian school of thought have maintained at least validity of perception and inference. To refute the validity of inference from the empirical stand points is to refute to think and discuss all thoughts, all discussions, all doctrines, all affirmations and denials, all proofs and disproves are made possible by inference. Thoughts and ideas are not material objects, that cannot be perceived, they can only be inferred perception which is regarded by the Carvaka is often found untrue, we perceive the earth as flat but it is almost round. Actually the Carvaka cannot support their views without giving reasons which pre suppose the validity of inference.

Jainist Theory of Knowledge

Jainism, the strict followers of non-violence has given 24 Tirthakaras or founders of the faith. Of these the first Rsahadeva and the last Mahavira, whose teaching are the essence bricks of modern Jainism. The Jaina

metaphysics or ultimate reality is realistic. It gives the doctrine of manyness of reality or pluralistic realism. According to Jaina theory there are innumerable real substances which are kept under two categories. 'Jiva' and 'Ajiva'. The whole universe is brought the two everlasting uncreated, eternal and co-existing, categories which are called 'Jiva' and 'Ajiva'. 'Jiva' means the consciousness spirit and 'Ajiva' means the unconscious non-spirit. Jiva is generally the same as the 'Atman' or the purusha in other pluralistic schools. Ajiva includes not only matter but also space, motion, rest and time which is called pudgala. Pudgala, dharma, adharama and akasa are described as asti-kaya dravya or substance which possess constituent parts extending in space, while time (Kala) is the only anasti-kaya dravya which has no extension in space. Substance and attributes are inseparable because the latter are the permanent essence of the substance and cannot remain without it.

Quality or guna intense in substance as materially in atoms, and they cannot exist by themselves. The dravya or substance with quality must exist in some form or state, this mode of existence is paryaya, and is subject to change. The Jainas do not hold that being is permanent, without becoming, change and end. Everything is produced, continues and is again destroyed. Anything which has origin, existence and destruction.

The Jainas classify knowledge into immediate (aparoksa) and mediate (paroksha). Immediate knowledge is further divided into 'Avadhi', 'manah

paryaya' and 'Kevala'; and medicate knowledge into 'mati' and 'shruta'. Perceptual knowledge which is ordinarily called immediate.

Nayavada, Syadvada, Anekandavada, these three doctrines comprise the metaphysical, ontological and epistemological standpoint of Jainism. 'Naya' means a stand point of thought from which we make a statement about a thing. All truth is relative to our stand point. Partial knowledge of one of the innumerable aspects of a theory is called 'naya'; judgement based on this partial knowledge is also included in naya.

Syadvada holds all knowledge to be only probable. Every proposition gives us, only a perhaps, a may be. We cannot affirm or deny anything absolutely of any object. Syadvada emphasises the extremely complex nature of reality and its indefiniteness. The dynamic character of reality can consists only with relative or conditioned predication. Every proposition is true, but only under certain condition ie. hypothetically.

Syadvada holds that there are seven different ways of speaking of a thing or its attributes, according to the point of view.

The seven different ways of speaking of a thing are the following.

1. Syadasti (is)
2. Syadnasti (is not)
3. Syad asti nasti (is and is not)

4. Syad avaktavya (us unpredicable)

5. Syad astiavaktavya (is and is unpredicable)

6. Syad nasti avaktavya (is not and is unpredicable)

7. Syadast nast avaktavya (is, is not and is unpredicable)

This doctrine insists on the correlativity of affirmation and negation. All judgements are existent as well as non-existent.

The Jaina metaphysics is a realistic relativistic pluralism. This is called 'Anekanda vada' or the doctrine of manyness of reality. Matter (pudagala) and spirit (Jiva) are regarded as separate and independent realities. Every object possesses innumerable positive and negative characteristics. It is not possible for us, ordinary people, to know all the qualities of a thing. We can know only some qualities of somethings. To know all the aspects of a thing is to become omniscient. Human knowledge is necessarily relative and limited and so are all our judgements. This epistemological and logical theory is called Syadvada.

As a matter of fact both anekandavada and Syadvada are the two aspects of the same teaching-realistic and relativistic pluralism. They are like the two sides of the same coin. The metaphysical side is that reality has innumerable charactersitics is called anekandavada, while the epistemological and logical side that we can know only some aspects of reality that therefore all our judgements are necessarily relative, is called Syadvada.

Being realistic relativistic pluralists, Jainism emphasized the relativity of knowledge. According to Jaina philosophy, the goal of life is the liberation from all kinds of bondage. To fulfill this right and true knowledge is essential. Jainism believes that ignorance is the real cause all types of bondage. Ignorance can be removed only by the attainment of true and right knowledge. Here Jainism agrees with Budhism, Samkhya and Vedanta Philosophy. To realise the liberations from all types of bondage true and right knowledge is very essential. They hold the view that the right and true knowledge is produced by the faith in the teachings of the omniscient Tirthankaras. Hence faith is very necessary. Right knowledge dawns when all the karmas are destroyed by right conduct. And it is right conduct which perfects knowledge since theory without practice is empty and practice without theory is blind. Hence right faith, right conduct and right knowledge, all the three together form the path of liberation which is the joint effect of these three Right faith (Samyak darsna) right knowledge (jnana) and right conduct (Charita) are the three jewls (tri-ratna) of Jainism. They are inseparable bound up and perfection of one goes with the perfection of the

Buddhist Theory of Knowledge

Buddhism is an elaboration of the teaching of Budha who was mainly an ethical teacher and a mystic rather a metaphysician and who preached only orally. Yet, a fairly good account of his teachings can be gleared. It may be

said three fold. The four noble truths, the noble eight fold path, and the doctrine of dependent origination.

There is an ethical and spiritual path by following which misery may be removed and liberation attained. This is the noble eight-fold path. Buddha's ethical middle path is like the golden means of Aristotle's "self-indulgence". Buddha's middle path enlightens the eyes, enlightens the mind which leads to rest, to knowledge, to enlightenment, to nirvana.

The doctrine of Pratitya Samutapada or dependent origination is the foundation of all the teachings of Buddha. According to this principle, everything is relative, conditional, dependent subject to birth and death and therefore impermanent. Thus every object of thought is necessarily relative. It is neither absolutely real nor absolutely unreal. All phenomenal things hang between reality and nothingness. They are like the appearances of the Vedantic 'Avidhya' or 'Maya'. Budha identifies it with 'Dharma', the law. Its knowledge leads to the cessation of misery.

The doctrine of dependent origination also yields the Buddhist theory of the transistory nature of things. There is nothing mental or non-mental; which is real. The universe or apparent phenomenal world perceived by as is Sunya or voide of reality. All things are subject to change and decay. As everything originate from some condition, it disappears when the condition cease to be. Whatever has a beginning has also an end. Buddha says "know

that whatever exists arises from causes and conditions and is in every respect impermanent. That which everlasting will perish, that which is high will be laid down low; where meeting is parting will be; where birth is death will come.

The doctrine of dependent origination means not only that everything has conditional and therefore non-permanent existence, but also that things not even for a short period of time, but exists for one partless moment only. Everything that it does not stay unchanged during any two moment because it does not produce the identical effect during both moments. Hence everything lasts only for a moment.

Theory of the non-existence of soul or anatma-vada plays a very important part in understanding the teaching of Buddha. Consistently with Buddha's theories of conditional existence and universal change, he denies the existence of soul (atma). The law of change is universal; neither man, nor any other being animate or inanimate is exempt from it; It is commonly believe that in man there is an abiding substance called the soul (atman) which persists through changes that overcome the body, exists before birth and after death, and migrates from one body to another. Budddha denies the existence of such soul. He doesn't deny the continuity of the stream of successive states that compose man's life. Life is an unbroken series of states or stages, each of these states depends on the condition just succeeding it. The continuity of the

life-series is therefore based on causal connections running through a different states. Everything has a cause. Nothing comes out of nothingness. Everything arises depending on some causes and conditions. Everything in this world is conditional relative and limited.

The continuity of the life series is often explained with the example of a lamp burning throughout the night. The flame of each moment is dependent on its own conditions and different from that of another moment which is dependent on other conditions. Yet there is an unbroken succession of the different flames, again, as from one flame to another may be lighted, and though the two are different, they are connected casually. Similarly the end state of this life may cause the beginning of the next. Rebirth is therefore not transmigrations, ie. the migration of the same soul into another body; it is the causation of the next life by the present. The conception of a soul is thus replaced here by that of an unbroken stream of consciousness as in the philosophy of William James. At the present state of consciousness inherits its characters from previous ones, the past in a way continues in the present through its effect. Memory thus becomes explicable even without a soul.

From a physiological point of view man is only a conventional name for a collection of different constituents, the material body (Kaya), the formless consciousness (Vijnana), just as a chariot is a collection of wheels, excels, shafts etc. The existence of man depends on this collection and

dissolves when the collection breaks up. The soul or the ego denotes nothing more than this collection.

From a psychological point of view, man as perceived from without and within, is analysable also into a collection of groups (pancha skandas) of changing elements namely, 1) form (rupa) consisting of the different factors we perceive in this body having for 2) feelings (vedana) of pleasure, pain and indifferences 3) Perception including understanding and naming (sanjna) 4) Predispositions or tendencies generated by the impressions of past experience (Samskara) 5) consciousness itself (vijnana). The last four are together called name.

Buddhism, though primarily an ethical, religious movement that came to give birth to about thirty schools of thought. At first it splited into two groups viz, Mahayana and Hinayana. After that they again splited into many groups. Of these many schools we shall first notice the four schools of thought distinguished in India. They are:

1) Some Buddha philosophers are nihilists (sunyavadior or Madhyamiks).
2) Others are subjective idealists (vijana-vadi or yogachara).
3) Others again are representation lists or critical realists (Bahyanumeya vadi or Santranntikas)
4) The rest are direct realists (Bhyapratyaksa-vadi or Vaibhusikas). The first two of above four schools come under Mahayana section and last

two belongs under Hinayana section. It should be noted, however, that under both Mahayana and Hinayana, there are many other schools. All these groups put forward their peculiar ideology and strongly argued for it.

Eventhough these different schools of thought have different stand point in ontologically, meta physically and epistemologically, some schools have agreement in some extent while agreeing with Sautrantika school of Buddhism regarding the reality of both the mental and the non-mental, the Vaibhusika school like many modern neo-realists point out that unless we admit that external objects are perceived by us, their existence could not be known in any other way. Inference of the fire from the perception of some smoke is possible because in the past we have perceived both smoke and fire together. One who has never perceived fire previously cannot infer its existence from the perception of smoke. If external objects were never perceived, as the sautrantikas hold, then they could not even be inferred, simply from their mental forms. The vaibashikas come to hold a theory of direct realism (bahya-pratyaksa-vada). This school of Buddhism believes in the reality not only of the mind but also of external objects. They point out that without the supposition of some external objects, it is not possible to explain even the illusory appearance of external objects.

The Sautrantika theory is called also the theory of inferability of external objects (Bahyanumeya-vada). The name Sautrantika is given to this

school because it attaches exclusive importance to the authority of the sutra-pitika. The arguments used by this school for the refutation of subjective idealism anticipated long ago some of the most important arguments which modern western rrealists like moore used to refute the subjective idealism of Berkely. The Sautrantikas position in epistemology resembles representationalism or the copy theory of ideas which was common among western philosophers like Locke. This exists even now in a modified form among some critical realists.

Nagarjuna and Asavaghosa who belong to Madhyamika school of Buddhism hold that there is nothing, mental or non-mental, which is real. The universe is sunya or voide of reality. The view of Madhyamika is not really nihilism, as ordinarily supposed, and that it doesn't deny all reality, but only the apparent phenomenal world perceived by us. Behind this phenomenal world there is a reality which is not described by any characteristic, mental or non-mental, that we perceive. Being devoid of phenomenal characteristics, it is called sunya.

In an epistemological, ontological and metaphysical stand point, the different groups of Buddhist schools of thought give different types of viewpoints. Concerning the nature and problem of knowledge. Though Buddhism is split into many schools of thought, it has given great contribution to the theory of knowledge in all aspects. Its metaphysical,

ontological and epistemological stand point is influenced very much in Indian philosophy as well as western philosophy.

- **Nyaya-Vaisesika's Theory of knowledge**

Nyaya-Vaisesika school is regarded as similar philosophy or Samanathantra. Both these school is considered as a group of philosophical system. Nyaya theory has developed logic and epistemology, while vaisesika, metaphysics and ontology. Nyaya school is founded by Goutma. The founder of Vaisesika system is Kanada who is also known as Kanabhuk, Uluka and Kashyapa. Nyaya school of philosophy is famous for its atomistic pluralism and logical realism. Nyaya theory of knowledge has great importance in philosophical world. The Vaisesika is pluralistic realism which emphasise that diversity is the soul of the universe.

Nyaya system accepts only four valid means of knowledge namely perception (pratyaksa) inference (anumana) comparison (upamana) and verbal testimony (sabda). Implement (Arthapathy) is reduced in to inference. Vaisesika admits only two valid means of knowledge which are perception and inference.

Knowledge according to Nyaya, reveals both the subject and object which are quite distinct from itself. This is the reason why Nyaya system is called as realists system. Knowledge or cognition is defined as apprehension or consciousness. Knowledge may be valid or invalid. Valid knowledge is

called 'prama' and is defined as the right apprehension of an object. Non-valid knowledge is known as 'aprama' Nyaya maintains as the theory of correspondence (Paratah Pramanya).

Goutama defines perception (pratyaksa) is a non-erroneous cognition which is produced by the intercourse of the sense organs with the objects, which is not associated with a name and which is well-defined. Perception as direct or immediate cognition which is not derived through the instrumentality of any other cognition.

Perception is a kind of knowledge and is the attribute of self. Ordinary perception presupposes the sense organs, the objects, the manas and the self and their natural contacts. The self comes into contact with manas, the manas with the sense organs and the sense organs with the object. The contact of the sense organs with the objects is not possible unless the manas first comes into contact with the sense organs is not possible unless the self comes into contact with the manas. Hence, sense-object contact necessarily pre-supposes the manas-sense contact and the self-manas contact. The manas is the mediator between the self and the sense organs. The external objects through the senses and the manas, makes an impression on the self. Therefore the Nyaya theory is realistic.

The Nayayika maintains two stages in perception. The first is called indeterminate or nirvikalpa and the second is determinate or Savikalpa. They

are not different kinds of perception, but only the earlier and the later stages in the same complex process of perception. All perception is determinates but is necessarily preceded by an earlier stage when it is determinate. Bare sensation or simple apprehension is nirvikalpa perception, perceptual judgement or relational apprehension is savikalpa perception. We have first sense-experience, then conception and their judgement, perception is a complex presentative-representative process in which we cannot really separate direct awareness from relational judgement.

Again according to Nyaya theory, perception is of two kinds, namely, laukika (ordinary) and alaukika (extra ordinary). When the sense organs come into contact with the objects present to them in the usual way, we have laukika perception. And if the contact of the sense-organs with the objects is in an unusual way, ie, if the objects are not ordinarily present to the senses but are conveyed to them through an extra-ordinary medium, we have alaukika perception. This is known as aluakika pratyaksa.

Ordinary perception is of two kinds, internal (manasa) and external (bahya). In internal perception, the mind (manas) which is the internal organ comes into contact with the physical states and process like cognition, affection, conation, desire, pain, pleasure a version etc. External perception takes place when the five external organs of sense organs of sight, sound, touch, taste and smell respectively when they come to contact with the

external objects. The external sense organs are composed of material elements of earth, water, fire and ether and therefore each senses has the particular quality of its element.

Extra-ordinary perception is of three kinds (1) Samanya laksana (2) Jnanlaksna and (3) Yogaja. Samanyalaksna perception is the perception of universals. According to Nyaya system, the universals are a distinct class of reals. They inhere in the particular which belong to different classes. Thus a cow becomes a cow because it has the universal cowness inhering in it. Ordinary we perceive only the particulars but not the universals. We perceive particular cows but we do not perceive a universal cow. Hence the Nyaya system maintains that the universals are perceived extra-ordinary.

Jnanalaksna is the second kind of extra-ordinary perception. This is the complicated perception through association of sensations. Sometimes different sensations become associated and form one integrated perception.

Yogaja perception is the third kind of extra-ordinary perception. This is the intuitive and immediate perception of all objects. It is like the 'Kevalajnana' of the Jainas, the 'bodhi' of the Buddhists, the 'Kaivalya' of the Samkya-yoga and the 'aparoksanabhuti' of the Vedanta. It is intuitive, Supra sensuous and supra-relational past, present and future possessed by the yogins through the way of meditation. This power gets through Yogaja perception.

Nyaya system also accepts other three pramanas as a distinct means of knowledge namely inference (Anumana), comparison (upamana) and verbal testimony (sabdha). About these three modes of valid knowledge is described elaborately in the former sub title "Normal modes valid knowledge". So it doesn't need a description in this part. Nyaya system reduced implement into inference. They hold that non-existence (abhawa) of a thing and the same sense organ which perceive its non existence. So Nyaya system doesn't accept these two modes of valid knowledge as an independent source of knowledge.

Nyaya accepts the metaphysics of the Vaisesika school and the accounts of matter, soul and God are almost the same as those in the Vaisesika. Nyaya and Vaisesika refers to God as the creator, maintained and destroyer of this world and introduce the element of devotion. God is called the moral governor of all beings.

Vaisesika has developed the metaphysical and ontological aspects of this combined system. While Nyaya discussed logic and epistemology Vaisesika system gives emphasis on the plurality of the objects. So this system is pluralistic realism. The word 'Vaisesika' is derived from the word 'Vishesha' which means particularity or distinguishing feature of distinction. Vaisesika doesn't believe in monism or oneness, diversity or plurality is the soul of the universe. So this system is known as Vaisesika philosophy.

Vaisesika system classifies the substances or objects into seven categories. A category is called substances (padhartha) and the entire universe is reduced into seven categories or padharthas. Padhartha literally means the meaning of a word or the object signified by a word. All that is real comes under the object of knowledge and is called a Padartha. The seven padharthas are:

- Substance (Dravya)
- Quality (Funa)
- Action (Karma)
- Generally (Samanya)
- Particularity (Vishesha)
- Inherence (Samavaya)
- Being (Abava)

Originally the Vaisesika system believed in six categories and the seventh, that of negation or abhava, was added later on. All objects can be thought (jneya) and named (abhidheya). The Vaisesika divides all existent reals which are all objects of knowledge into two classes - being or bhava and non-being or abhava. Six categories came under bhava and the seventh come under abhava or non-being.

The Vaisesika system holds the view that the material object of the world are composed of parts and are subject to production and destruction.

They are divisible into smaller parts and the latter are further divisible into still smaller parts. By this logic we have to accept the minutest particle of matter which may be not be further divisible. This indivisible, partless and eternal particle of matter is called atom (paramanu). All physical things are composed by the combination of atoms. Creation therefore means the combination of atoms in different proportions and destruction means the dissolution of such combinations.

The atoms are said to be four kinds: (1) earth (2) water (3) fire (4) air. These atoms combine in geometrical progression and not in arithmetical one. They increase by multiplication and not by mere addition. When motion is imported to them by the unseen power, they begin to vibrate (Parispanda) and immediately change into dyads. A dyad is produced by the combination of two atoms. The atoms are its inherent cause; and the unseen power is its efficient cause. An atom is indivisible spherical and imperceptible ie. a dyad (dyanuka) is minute (anu), short (hrasva) and imperceptible. Three dyads form a third (trynuka) which is great (mahat), long (dirgha) and perceptible. And so on by geometrical progression till the gross elements of earth, water, fire and air arise.

The material cause of the universe is neither produced not destroyed. It is the eternal atoms. It is only the atomic combinations which are produced and which are destroyed. The combinations do not form the essential nature

of the atoms nor do they pre-exist in them. The effect doesn't pre-exist in its cause but it is a new beginning of a fresh creation (Aramabavada). Cause is a fresh beginning of course, the effect presupposes a cause. But it is not contained implicitly in the cause nor it is identical with the cause. The effect (Kavya) is non-existent (asat) before its creation and is a new beginning (aramba), a fresh creation and epigenesist. It is distinct from its cause and can never be identical with it. It is neither an appearance nor a transformation of the cause. It is newly brought into existence by the operation of the cause. Hence the Nyaya-Vaisesika system advocates Vada Asat kanyavada' or 'Arambavada'. This doctrine is also known as paramanu kanyavadas. This view of causation is directly opposed to the Samkhya-yoga and Vedanta view of Satkanyavada.

There are three kinds of causes in Nyaya-Vaisesika system.

- Samavayi or inherent cause
- Asamavayi or non-inherent cause
- Nimitta or efficient cause Samavayi or inherent cause is also called as upadharana or material cause. It is the substance which the effect is produced. For eg: the threads are the inherent cause of the cloth and the clay is the inherent cause of the pot. The effect in its material cause. The cloth inheres in threads. The effect cannot exist separately

from its material cause, though the cause can exist independently of its effect. The material cause is always a substance (dravya).

The second kind of cause is asamavayi or non-inherent. In this cause is inherse in the material cause and helps the production of the effect. The conjunction of the threads (tantusamyoga) which inheres in the threads is the non-inherent cause of the cloth of which the threads are the material or the inherent cause. The colour of the threads (tanturupa) is the non-inherent cause of the colour of the cloth. The cloth itself is the inherent cause of colour. The effect as well as its non-inherent cause both co-inherent in the material cause. The non-inherent cause is always a quality or an action (guna or karma).

The third kind of cause is nimitta or efficient. It is the power which helps the material cause to produce the effect. The weaver is the efficient cause of the cloth. The efficient cause of the cloth. The efficient cause includes the accessories (Sahakari) eg: the loom and shuttle of the weaver or the staff and wheel of the potter. The efficient cause may be a substance, a quality or an action.

The Vaisesika atonism is not materialistic because the Vaisesika school admits the reality of the spiritual substances - souls and god and also admits the law of karma. The atoms are the material cause of this world of which god assisted by the unseen power in the efficient cause. The physical world

presupposes the moral order. Evolution is due to the unseen power consisting of merits and demerits of the individual souls which want to bear fruits as enjoyment or suffering to be experienced by the soul.

Bein a combined system of philosophy, Nyaya and Vaisesika has given great contribution to the philosophical world in various aspects like metaphysics, ontology, epistemology and causal theory. Nyaya school of philosophical thought is famous for its atomistic pluralism and logical realism while the Vaisesika system is pluralistic realism which emphasises that diversity is the soul of the universe. This combined system of philosophy has a great impact in ontology, metaphysics and logical realism.

Samkya-Yoga: Theory and Knowledge

Like Nyaya-Vaisesika system, Samkya and yoga is also a combined system of philosophical thought. The founder of Samkhya system is Kapila while yoga system is Patanajali. The philosophical standpoint and the goal of life is almost same as both these system. So these two system stands as a combined system of philosophical thought.

Being an allied system of thought samkyayoga accepts only three valid pramanas namely perception inference and verbal testimony. This system doesn't accept the other three pramanas as a valid means of knowledge. The theory of knowledge of samkhya-yoga has a resemblance or similarity to the critical realist. Critical realists holds that cognition or knowing process has

three components (1) mind (2) external objects (3) contents or data. Datas are not mental or objects. It has no existence in time and space. It is a reasoning reality. Without the help of datas, mind cannot know the objects. As same as samkhya-yoga says there are three factors to the knowing process namely purusha, manas and external objects. Knowledge is possible only through the mind (manas). Knowledge is impossible, in the absence of mind.

Samkhya a theory holds the view that the whole universe includes twenty five principles including purusha. Because of this philosophical system is known as samkhya. There is an another view regarding the meaning of the word 'Samkhya' which is Samyak Darsana' or real knowledge. It upholds the dualism or Dvatia-vada. 'Samkhya says absolute reality is only two purusha and prakrti. Purusha is pure consciousness. It is soul, the self, the spirit, the subject of the knower. It is neither body nor senses nor brain nor mind (manas) nor ego (ahamkara) nor intellect (buddhi). It is itself pure and transcendental consciousness. It is the ultimate knower which is the foundations of all knowledge. It is beyond time and space, beyond change and activity. It is uncaused eternal and all pervasive.

Unlike Advaita Vedanta and like Jainism and Mimamsa, Samkhya believes in the plurality of the purushas. Like the Jivas of Jainism, the souls of Ramanuja and the mounds of Leibnitz, the Samkhya's purushas are subject

to qualitative monism and quantitative pluralism. The selves are essentially alike; only numerically they are different. Their essence is consciousness.

Prakrti is always changing whereas purusha has no any change. It exists without any change. All this world of object is derived from the evolution of prakrti. Prakrti is the root cause of universe. All worldly effects are latent in the uncaused cause, because infinite regards has to be avoided. It is the potentiality of nature, the receptable and nurse of all generation. As the uncaused root cause, it is called prakrti, as the first principle of this universe, it is called 'pradhana'.

Prakrti is said to be the unity of three 'Gunas' held in equilibrium (gunanam Samyavastha). These three Gunas are Sattva, Rajas and Tamas. When the change take place the equilibrium of these three Gunas, the evolution begins, and the change of the equilibrium of these three Gunas is the cause of the diversity of this world, when these three are held in a state of equilibrium, that state is called Prakrti.

The Samkhya theory of causation on which its doctrine of Prakrti is based is known as Satkarya-vada. According to this theory the effect is pre-existent in its material cause. Samkya believes that prakrti is the material cause of the whole universe. All material effects are the modification of (parinama) of prakrti. Therefore, Samkhya theory is known as Satkarya-vada. It is also known as prakrti parinama vada. All material effects pre-exist in the

eternal bosom of prakrti and simply come out of it at the time of dissolution. There is neither new production nor utter destruction. Production means development or manifestation (arambha); destruction means envelopment or dissolution (tirobhava). Production is evolution; destruction is involution. Through out their causational theory Samkhya put forwards a scientific and evolutionary approach.

Samkhya liberation is a state of complete isolation, freedom from all pain, a return of the purusha to its nature as consciousness. Samkhya believes that the earthly life is full of three kinds of pain - (a) adhyamika (2) adibhautika (3) adhidaivika. The end or goal of human life is to get rid of these three kinds of pain and sufferings. Wherever there are gunas there are pains. Even the so-called pleasure lead to pain. Liberation means complete cessation of all sufferings and pain which is the summum bonum, the highest and of life (apavarya or purusartha).

Bondage is due to ignorance and liberation is due to right knowledge. It is only right knowledge which leads to liberation because bondage is due to ignorance and ignorance can be removed only by right knowledge. Here Samkhya system has a resemblance or similarity to the Jainism, Buddhism and Vedanta Philosophy. Samkhya admits both Jivanmukti and Vidhamukti. The moment right knowledge dawns, the person becomes liberated here and now eventhough he may be embodied due to 'prarabhakarma'. The final and

the absolute emancipation from all bondage, the complete disembodied isolation automatically refutes after death.

The Samkhya system, sometimes, described as the 'atheistic samkhya', and distinguished from yoga which is called 'theostic samkhya'. But this distinction is contraversial because of there is no any evidence to prove this. The original Samkhya was monistic and theistic. But the classical Samkhya, perhaps under influence of materialism, Jainism and the early Buddhism, this system may be come atheistic. This is an orthodox system because it believes in the authority of Veda. It doesn't establish the non-existence of God. It only shows that prakrti and purusha are sufficient to explain this universe and therefore there is no reason for postulating a hypothesis of God. Whatever this system is theistic or atheistic, their contribution in philosophical world has great influence in Indian as well as western philosophy. Their ontological, metaphysical, epistemological and causational theory has great impact in philosophical arguments and discussions.

Patanjali, the great sage founded the yoga system. Later it is developed by many other sages and thinkers and became more popular. Yoga system is regarded as the complement of Samkhya system. Its epistemological theories run on the ground of Samkhya's metaphysics while Samkhya's metaphysics is under the shadow of yoga's epistemology. Both these system accepts only three valid. Source of knowledge namely perception, inference and verbal testimony.

Yoga is defined as the cessation of the modification of Citta. Citta means the three internal organs of Samkhya-intellect or budhi, ego or ahamkara, mind or manas. Citta is same as 'anthakarana'. The cessation is through the modification or concentration of Citta which is also called yoga (yoga samatdhi).

For the cessation of the modification of Citta, Yoga system advocates control over the body, the senses and the mind. Being a sound mind, it needs a sound body. Sensual attachment and passions distract the body as well as the mind. They must be controlled or conquered. To overcome this yoga suggests us the eight steps of practices. It is known as 'Astanga-yoga' or 'Eight Path of Discipline'. It includes (1) Yama (2) Niyama (3) Asana (4) Pranayama (5) Pratyahara (6) Dharana (7) Dhyana (8) Samadhi

To control over the body, sense organs and the mind, yoga advocates these "eight fold path of Discipline".

Yoga accepts the existence of God. Patanjali defines God as a special kind of purusha who is always free from pains, actions, effects and impressions. He is eternally free and is never sound nor has any possibility of being bound. He is above the laws of karma. He is omniscient, omnipotent and omnipresent. He is perfection in incarnate. He is a pure knowledge. He is the teacher of the Veda. Devotion to God is one of the surest mans of attaining concentration. But God of yoga is not the creator, preserver or

destroyer of this world. He is only a special purusha. He doesn't reward or punish the souls. He cannot grant liberations. He can only remove the obstacles in the upward progress of the devotees and the liberation of purusha. The end or goal of human life is not the union with God, but only the separation of purusha from prakrti.

Mimamska's Theory of Knowledge

Among the six orthodox (āstika) Indian philosophical system, the fifth is purva mimamsa, the sixth or last one is Uttara-mimamsa or Vedanta. Mimasmsa and Vedanta is treated as an allied systems of thought. Both are based on the authority of Veda and Upanishad's and both try to interpret the Veda and Upanishads. The earlier portion of the veda ie., the mantra and the Brahmna portion is called kurmakenda, while the later portion, ie., the Upanishads is called jnakenda. Purva mimamsa deals with the earlier portion of veda and is therefore called purva -mimamsa, uttara mimamsa tried to interpret spiritual theory in upanishads, the later portion of veda ie, called jnānakānda and is therefore called uttara -mimamsa. Jaimini maharshi was the founder of purva mimamsa. Kumarika Bhatta and Prabhakara Bhatta are the interpreters of Jamini's mimamsa sutra. Based on these interpretation there were two systems of mimamsa is derived; Bhatta-mimamsa and Prabhakara -mimamsa.

Mimamsa discussed in very depthly the nature problems of the knowledge, interpretation of valid sources of knowledge, how can be real knowledge possible, what are the measurement of real and correct knowledge. Prabhakara mimamsa accepts the five valid sources of knowledge viz, perception inference, comparison, verbal testimony and arthapathy, Bhatta-mimamsa accepts all the complete valid sources of knowledge including the last one.

The aim of mimamsa is to ascertain the nature of Dharma. Dharma is not a physical entity and so it connot be apprehended through their senses. The pramana of the veda is the only source of our knowledge of dharma. The vedas are eternal, since the words of which they are composed are eternal. The relationship between the word and its meaning is natural and not created by convention. Words (Sabdha) are not really the perceived sounds (dhavani). The sounds produced by the speaker and perceived by the hearer are only the revealers of the words which are not themselves produced. Words are really the letters which are partless and uncaused. The words as letters may be regards as eternal, that is, as having existence, but being uncaused. Mimamsakas this theory is known as sabdanithya vada.

Mimamsaka's theory of Jatisakti vada states that universals (jati) are eternal and have potency (sakti) to manifest forms (ākriti) and seems different kinds of individuals. Words denote classes and not individual. When we say

"bring a cow", we not mean a particular cow, but any animal possessing the features of a cow. The cow denote class or form.

According to mimamsaka's theory of knowledge, the knower, the known and the knowledge are given simultaneously in every act of cognition knowledge reveals itself as well as the knower and the known.

The Vedanta theory of knowledge discussion is based up on the Veda and Upanishads and it tries to interpret the Veda and Upanishads. Vedanta philosophical thought includes Advaita, vishistavaida dvaita, sudhavita, Dvaitadvaita and Purnadvaida. Among these different philosophical thought, Advaita Vedanta of Sankarachaya had a great impact and influence in Indian philosophical thought.

Adviata or monism means that reality is one and only one. This view of monism states that Brahma is one and only one reality while all the things seen in this world is only a mere appearance of it. Brahman or Atman which is indescribable, being not only inseparable but even unthinkable. Brahman is the only one reality; the world is ultimately false, and the individual soul is non-different from Brahman. Brahman and Atman or the supreme self are synonymous terms. The individual selves on account of their inherent.

Difference or multiplicity seen in this world is only due to Maya. Maya is also known as avidya, ajnana, adhyasa etc. The coupling of the real and

unreal is called superimposition (adhyasa) or error or illusion (maya) or ignorance (avidya).

The world is a creation of maya. The world possess three different grades of existence (a) partibhasika sattva or apparent existence (2) Vyaharika sattva or practical existence (3) Paramartika sattva or supreme existence. Avidya imagines themselves as different from Brahman as this world of plurality, even as we mistake ropes as a snake. Avidya vanishes at the down of knowledge the supra relational direct and intuitive knowledge of the non-dual self which means liberation. Sankara repeatedly asserts that the absolute (Brahman) can be realised through knowledge and knowledge alone.

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CHAPTER III

PHILOSOPHY AND EDUCATION AS A WAY AND METHOD TO REVIEW AND REALISE THE KNOWLEDGE

The Central subject matter of philosophy and education is knowledge. Philosophy deals with how knowledge is possible, the origin and development of knowledge, the nature and problem of knowledge, while education deals with how to learn knowledge and what are the methods to acquire knowledge. Both the philosophy and education concern or regard the nature and characteristics of knowledge and the accumulation of knowledge. Philosophical outlook influence educational effort and educational activities are rooted in philosophical investigation. Philosophers of course from the time of Plato onwards have taken interest in education and have dealt with education in the context of wider concerns about knowledge.

1. Philosophy, Religion and Science Search the Truth Through knowledge

The common purposes and objectives of philosophy religion and science are the same. They have one common aim; the discovery of truth throughout the knowledge. Though their methods and techniques are differ, they are helpfulmates in the journey to reach the truth.

Those who are not aware of the nature and method of philosophy often confuse it for religion. Though there are a few similarities between them. The objectives of both religion and philosophy is the same, discovery of truth through the existing knowledge-for instance about the self, relation between the self and the world around etc. The difference between the two lies in the method of investigation of truth. Faith is the basis of religion on a prior beliefs or axioms. But the method of philosophy is an independent, objective and impartial enquiry. If philosophy is speculative and contemplative, religion is action oriented and ritualistic. Religion aims at to realise the given ultimate reality of life. Philosophy is an attempt to understand the ultimate reality of life.

Both philosophy and science are based on reason, system and order, Science today is more philosophical at higher levels, as philosophy is scientific in its foundations. Science aims at attaining truth about the world. It finds truth through experimental researches are observations. Scientific knowledge is this type of knowledge. It rests indeed on presuppositions or assumptions, the basic ones being the unity and the simplicity of nature. That is to say, it is presupposed that the parts of the universe and interrelated in a manner analogous to that in which the organs of the living body are interrelated. And the simplicity of nature is presupposed on the sense any rate, that it two or more generalizations are possible, that we have to choose

between them. Though however science rests on presuppositions, if none the less aims at truth.

The knowledge which we obtain though science is knowledge of the relation between things. Science tells us the relation between things rather than the inner natures of physical natural things. The physical, natural and social sciences might provide an integral understanding of the physical, natural and human world. On the basis of such studies the philosopher will offer an organized and systematic knowledge of the universe.

Human knowledge arises from two chief sources in the mind. The first is the faculty or power of receiving impressions and through this an object given to us. Sense intuition provides us with data and we cannot obtain objects as data in other way. The second main source of human knowledge is the power of thinking the data by means of concepts. The faculty of spontaneously producing representations is called understanding. And the co-operation of both faculties is required for knowledge of objects. Without sensibility no object would be given to us, and without the understanding no object would be thought. Thoughts without concepts are empty; intuitions without concepts are blind. The two powers or faculties cannot exchange their functions. Thee understanding is incapable of intuiting, and the senses are incapable of thinking. It is only from the united co-operation of the two powers or faculties that knowledge can arise. But though the co-operation of

both powers is required for knowledge. We ought not to overlook the differences between them. And we can distinguish between sensibility and its laws on the one hand and understanding and its laws on the other.

2. Philosophy as a guide to a way of life and a view of life

It is rather difficult to define philosophy in a way that is universally acceptable. There are different meanings to philosophy. These meanings correspond to the diversities of life. Different philosophical thought look into different ways of life and mould philosophical system in different ways. Philosophy deals with higher knowledge that is pursuit of truth, wisdom and reality philosophy is the study of almost everything. It is regarded as the knowledge of essence.

The word philosophy is derived from two Greek words 'Philin' and 'Sophiya' which literally means love of wisdom. A philosopher is a lover of wisdom and curious to learn more and it is not satisfied with mere knowledge of facts. A philosopher has definite purpose or objective of having a comprehensive view of things and not simply a bits of knowledge, aims at a world vision or to see and understand the whole of reality.

Philosophy is a view of life. It gives us a direction to the life; offers a design for living Dr. S. Radhakrishnan suggests this in his two works. "The Hindu view of life" and "the idealistic view of life". Philosophy directs life and gets refined on the basis of experience. Philosophy is the result of life

experiences and life is governed by the light of philosophy. Allowing these expressions their widest scope to denote thought about general features of the world and human experience within it.

Gandhiji has titled his biography as "My Experiments with Truth". When he was asked to give a message for the world he is reported to have answered thus: "My life is my Message" (Humanistic Idealism). Through these instances let us see philosophy is a view of life, a direction to life and a design for living.

It is said that philosophy in the west was born out of wonder. Thales of Miletus has been considered by the historians of western philosophical thought as the father of western philosophy. He was the first to wonder about the phenomena of the world around him. But philosophy in India emerged as a result of the reflection of life experience.

The aim of Philosophical inquiry is to gain insight into questions about knowledge, truth, reason, reality, meaning, mind and value. It is philosophy that mounts a direct assault on them in the hope clasifying them and, where possible answering them. The great Greek Philosopher Sophocles said that a philosopher had to see life steadily and see it as a whole. He must have a holistic and self-contained view of the universe. As Henderson puts it: "Philosophy a synoptic view of universe" (Henderson, *op.cit.,* Chapter 1, p.5).

On these lines Dr.S. Radhakrishnan defined the education thus, "The aim of education is to give an integrated view of the universe."[2](University Education Commission Report, Chapter-1)

A philosopher has a definite purpose or objective of having a comprehensive picture of all things and not of simply bits of knowledge. He aims of a world vision or to see and understand the whole of reality. The physical, natural and social sciences might provide an integral understanding of the physical, natural and human world on the basis of such studies the philosopher will offer an organized and systematic knowledge of the universe.

3. Philosophy Is A Mental Activity of Thinking about the problem of human life

Philosophy is a mental activity thinking about the problems of mankind. It is a mental activity of thinking about the life of man. Its nature and purposes; the mind and its occupations, birth, death and phenomenal world; feelings, ideas, value of social life etc. This activity must not be limited to a study and discussion among a few persons but be able to stimulate the interest of humanity at large.

Many thinkers have considered philosophy is primarily is an activity. As Levision defines, "Philosophy is first of all an activity of a certain kind and only secondarily a subject-matter consisting of a definite body of literature."(Levinson Arnold B, "The use of philosophy and the problems of

Education in selected reading in the philosophy of Education"(Ed.) Park Joe Mac Millan Co. New York- 1968, p.26)

The life and works of the great philosophers should be studied in the light of such views. For Socrates philosophy was a daily activity. He used to invite the Athenian citizens for arguments and discussions about the problem of life around the world. Philosophy is the result of life experiences and life is governed by the light of philosophical investigation. Philosophy directs life and gets refined on the basis of experience.

Philosophical outlook influence a synthetic vision of life. In a philosophical outlook one can make his life more better and become more calmful and peaceful. Philosophy determines the ends, goals or aims of life and to realize these goals it assumes certain values in life. Philosopher's job is to give a comprehensive and rational account of the nature of reality and of man's place in the scheme of things and to deal with issues of the life of world. A philosopher's view may influence society at large. He discovers a truth and tries to make is as widely public as possible. He propagates it among the masses. Whether we take the case of Socrates, Plato, Aristotle, Pestalozzi, Frobel John Dewey, Sankara, Ramanuja, Kabir or Mahatma Gandhi all of them hit upon a new truth and they propagate their truths among the people. Therefore philosophy should be treated as a mental activity of criticism, classification and interpretation of life.

4. Philosophy and Education as a way to realise the Knowledge

The main concerning aspects of both philosophy and education is knowledge attainment. Philosophy regards the nature and the problem of knowledge and how it is possible whereas education concerns how to learn the knowledge, the different methods to acquire knowledge. Education is the active aspects of philosophical belief. The practical means of realising the different ideals of life. Philosophers have taken interest in education very early period. A philosopher according to Plato is one who has a taste for every sort of knowledge who is curious to learn and is never satisfied with mere bits of knowledge or facts. On these contexts philosophy and education has a relationship both deals with the acquiring of knowledge and characteristics of knowledge.

Different philosophers have different views regarding to the fundamental problems of education. Therefore, there are different schools of philosophy of education like idealism, realism, naturalism, pragmatism, existentialism, pernennialism, reconstructionism etc., emerged. But the most important of them are idealism, realism, naturalism and pragmatism. All of these schools of philosophy of education differ their view of education.

Philosophy and education are the two sides of the same problem; they present different view of the same issue. Philosophy is the contemplative side of life and education is the dynamic or active side of life. Sir John Adams

had said that education is the dynamic side of philosophy. Philosophy and education are the two sides the same coin-ie., life, a relation similar to the one between the planner and policy maker and the executive. As Ross puts it, "Education is the active aspects of philosophical belief, the practical means of realising ideals of life." (Ross, "Ground work of Educational Theory". George, G., Harraf & Co.Ltd., London, 1958, p.16).

Philosophical outlook influence educational effort and educational activities are rooted in philosophy. Philosophy lays down principles which are carried out by education. Philosophy determines the ends, goals or aims of life and education is an attempt to realise these goals. The ends are set by philosophy and there are many conflicting and complementary ends as there philosophers. As Henderson puts it; "Educational aims cannot be determined apart from the ends and aims of life itself for educational aims grow out of life's aims. To determine what constitutes worth living has been one of the chief tasks of philosophy". (Henderson: "Introduction to Philosophy and Education", The University of Chicago press, 1947, pp.16-177).

Education naturally depends on the prevailing philosophy of the day. All great philosophers in one way or the other were educationalists. Philosophy is the backbone of education. It is impossible to imagine a system of education completely divorced from any philosophy. A Philosopher's view

may influence society at large, hence education is only the propaganda of philosophy. It is a means of carrying out the programmes of philosophy.

Philosophy assumes certain values. Education is the means, devised to train individuals to realise these values which are supplied by philosophy. By this means, philosopher carries out his educational mission and becomes an educationalist. He discovers a truth and tries to make it as widely public as possible. He propagates it among the masses whether we take the case of Socrates, Plato, Aristotle, Pestalozzi, Frobel, Dewey, Sankara, Mahatma Gandhi, Raveendranath Tagore all of them hit upon a new truth and then they propagates their truth among the people. Thus the philosopher becomes an educator.

If philosophy is taken to be a determiner of the constituents of a worthy way of life, education then becomes a means to inculcate that worthy way of life. In other words philosophy determines the ends, goals or aims of life and education is an attempt to realise these goals.

5. Education as a means of Acquiring knowledge and the Transmission of Cultural Development

Education does not have a definition of universal acceptance. There are various meaning and definitions of education. These diverse meanings and definitions correspond to the many functions of education. The origin of the word education is from the Latin roof 'Educare' which means 'to lead out'

or 'bring forth'. In Latin 'e' stands for 'out of' and 'duco' means to lead. Hence the word education means "to lead out of' or 'to lead forth' or 'to draw out'. Education may be treated as a process or drawing out from within, rather imposing from outside. This explanation presumes that all knowledge is inherent in children or educant.

Education is a process of purposeful activity. It will not serve its purpose if it does not begin with well defined objectives. Aimless activity results in wrong, wastage of time, money and labour. To have a purposeful aim, it has to act with foresight, to act intelligently, setting specific aim is the first step in planning. It implies purposeful organization, execution and evaluation. Only through these steps we can bring about improvement and to realise the ultimate aim and values of education.

Education is a process of nurturing personal growth, of aiding the development of individual in a controlled environment. Education seeks to influence the development of persons. It consists in guiding development. It involves the modification of natural development. The whole environment exerts influence on the individual. Main..... possesses the power to adopt. Not only does he adapt himself to the environment but also adapts environment to his needs. Gandhiji's definition of education in the 'Harijan issue' of 1937 points to this: "Education is drawing out of the best in child and man body mind and spirit." (Mahatma Gandhi, "Harijan issue of 1937).

Gandhiji desired that best of body and spirit also be drawn out along with that of the mind. All definitions of education emphasizes these fact.

In fact each educational system, should set forth certain specific objectives and strive to realise them. The whole organization of the educational programme should be geared to these ends. Aims can be either idealistic or realistic individual or social. Some of the recognized aims of education are the following:

- Knowledge aim
- Vocational aim
- Harmonious development aim
- Complete living aim
- Religious aim
- Moral aim
- Individual aim
- Social aim

Educational aims are correlative to the ideal of life. In fact there are many aims of education as there are individuals. The aims of education can be many, some general and the other more specific. The objectives are determined by many factors such as time and place, economical and political conditions, philosophy of life and religious views and even by psychological factors of the capacities or level of understanding of the learner.

In the context of modern society, the functions of education is not merely to supply some amount of knowledge to the educand, but to develop in him desirable habits interests, attitudes and skills which help one to lead a full and worthwhile life. In brief education can be understood as the all round development of the individual so that the individual realizes his true nature as being part of the total whole.

Apart from individual as the focus, socially education means the transmission of cultural development. It is a platitude to say that man is born with a biological heritage into social heritage. Culture is the another name for this social heritage. The essence of all human achievements is noted in culture. In the words whole, "which includes knowledge, beliefs, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society." ('Primitive culture', Vol.1, Harpers and Brothers, New York-1958).

This culture is transmitted by every society to its next generation for the stability and continuity of society. Education is the process of cultural transmission. J.S. Mill defined, "Education is the culture which each generation purposely gives to those who are to be its successors, in order to qualify them for at least keeping up, and if possible for raising the level of improvement which has been maintained." (J.S.Mill, "On Education"). Preservation of culture is possible only through education. Education

transmits the beliefs, practice customs and traditions of the community to the child. Each educational system set forth specific values, goals, beliefs, practices, customs, habits and traditions. By doing this, education is really transmitting the culture of the race to the coming generation for preservation and refinement. Thus in the life of the human race, education is both a conservative and a progressive factor.

6. Philosophy of Education-Practicability through Education

Philosophy is considered as the knowledge of the essence, the substance that by knowing which everything else can be known. Philosophy began in wonder as well as in the urge for understanding of world enigma. Men everywhere realized that the sensual world is not the only world effective in their life. They, therefore tried to rise from the sensuous world to reach the height of supra-sensuous. Ancient philosophy in India as well as well as in Greek was essentially an attempt to rise from sensuous impure to non-sensuous pure thought. Such an enquiry directed to a theory can explain all the mystery of what, how and why. Plato's philosophy is an example of such an attempt. As knowledge in his days was inter-connected and comprehensive. He has discussed a variety of human problems including those of epistemology, meta-physics and psychology, social and political philosophy. In these ancient days even astronomy and physical science were very much connected with social sciences and philosophy. His search was

not for the particulars but for the universal behind the particulars. His theory of ideas has been the source of evolution of idealist school in western philosophy.

Philosophy of education is related to general philosophy partly by its purpose but more directly its methods. Philosopher's job is to give a comprehensive and rational account of the nature of reality and of man's place in the scheme of things, and to deal with issues of the life of world. Its aim is to bring clarify to the concepts, to test the coherence of the theories and to serve the therapeutic purpose of dissolving those problems which persist only because of linguistic confusions.

The problems thrown up by education are not usually problems arising from conceptual confusions but are real substantial problems arising out of practice. These problems need to be solved rather than dissolved. Philosophers of education are not normally pre-occupied with metaphysical confusions. They certainly engage in a higher-order activity but their interest is with conceptual clarify as a preliminary for the justification of educational theory of practice. The pre-occupation of clarity leads them to philosophical analysis, the analysis of concepts and justification. This leads to the scrutinisation of various theories of education. This is why it was said that philosophy of education is connected with general philosophy more directly

by its methods than by its therapeutic purposes, philosophy of education focuses on the language of educational theories and practices.

The philosophical enquiry about education is further made about the contents of education. In order to build a sound philosophy of education we have to formulate a reasonable and dependable philosophy or point of view. Ideas about the goals of life are tested for their philosophy through education. Theory may be a guide to practice but practice also offers corrective to theory. Such a bipolar relation between philosophy and education was visualised by John Dewey. For him this relation is so intense that he considers philosophy as the general theory of education.

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CHAPTER IV

THE VITAL AND DYNAMIC ROLE OF INFORMATION IN COMMUNICATION AND THE COMPREHENSIVE GROWTH AND DEVELOPMENT OF A COUNTRY IN AN INFORMATION AGE

Knowledge or information may be defined as the accumulated advances of thought, deeds and experiences of people over the past and present and forecast of the future that is available to society. It is the totality of the ideas conserved by human beings at any point of time. All kinds of knowledge is a result of a synthesis between percepts and concepts. Knowledge could be attained if we use an appropriate method of enquiry.

Both knowledge and information is a human product. It is the result of human thinking. Due to sensory experiences information gets accumulated in the mind of an individual. Man always comes into account of new thought through interaction with others. Thus information is the knowledge gained by human beings through experiences, observations, experiments and other means. However, information may be abstract or concrete.

Everybody is familiar with the term, "information" we know what information is however when we try to define information, we find that it is

difficult. We can apply a variety of statements to define information, but we cannot say that any definition of information is universally valid. The word information generally means a message, a signal or a stimulus. In the generic sense information defined as that which be communicated, distributed or received through any medium of communication:

Various authors have defined information in a different ways. According to Bell, information is news, facts, statistics, reports, legislation, text code, judicial decision, resolutions and the like." According to Rowery and Turner, information is the data which is transmitted between individuals and each individual can make whatever use he can of it". Faradance defines information as, "Any physical of representation or a particular thought used for communications."

Generally information may be defined as "Data of value to decision making". Most of the dictionaries define information as knowledge. It may be knowledge communicated or received concerning a particular fact of a circumstances. Any knowledge gained through communication, research, investigation, study or instruction is information.

On the basis of above definition, it can be said that data, facts, intelligence, advice or knowledge which can be used, transferred or communicated is information. It is derived from experience observation, interaction and reading or any sources. It can be right or wrong, good or bad,

organized or unorganized and even related or unrelated. The amount of information which affects the behaviour of the recipient and his ability to take some decision, however varies from person to person, from time to time and from place to place.

1. Information as a Raw-Material of Emerging Knowledge

Information is only a data or a piece of knowledge and only a part of it. It is only a smaller idea but knowledge is a wider concept. Knowledge is the totality of the information conserved by human beings at any point of time. Both knowledge and information is produced by the result of human thinking. Through our sensory experiences information gets accumulated in the mind. Knowledge contains a body of information or a collection of information conserved by human beings at any point of time. Thus knowledge is the information gained by human beings through experiences observations, experiment and other means. Information which is the result of a meaningful response to a stimulus when correlated, synthesized and stratified during the course of time becomes knowledge. Knowledge applied and tested over long period of time by a continuous stream of minds resulting in its acceptance as truth becomes wisdom. By subjecting a body of information or knowledge over a long period of time to experience, testing and thinking, extended modified created or altogether discarded, thus effecting wisdom and society.

Information is the basic management tool for national planning. It is the basic resource for science and technology and the basic raw material for the development and establishment of an industry. It has become a social necessity information is regarded as the developmental source in every phase and every walk of life. It originates in an individual's cognitive frame work.

Some important characteristics of information may be classified as follows:

- Information is a human product.
- Information is the raw material from which knowledge derived.
- Information is the finished product of data.
- Information is used as an aid in decision making.
- Information is finite every rowing
- Information is inter disciplinary
- Information is used but it cannot be consumed.
- Information is in exhaustible as its value does not decrease after its use.
- Information is cumulative.
- Information increases the level of knowledge and of the recipient.
- Information helps in establishing a continuity from past to present and to the future.
- Information is turbulently dynamic and multidimensional.
- Information is self renewing.

- Information can be recorded or translated.
- Information is the result of observation and surveys.
- Information helps in arriving at the right answer.

According to Legomeride "One of the inherent characteristics of information is that it is alive, it exists only in the human mind, and as such, it is both the input and output of human perception."

Any definition of information science to be valid today has to except and reflect upon the nature, form and complexities of information and information system existing in the digital era. The information is better explained by beginning with natural information. Natural information is the pattern of organization of matter and energy in the material world. Natural information gets represented through the process of encoding or embodying. The encoded information which we encounter in our social and perceptual world is based on patterns of organization derived from the use of symbols, language of signals. Embodied information is the corporal expression or manifestation of information previously encoded. Thus, "Information is given meaning and integrated with other contents of understanding" is knowledge. Taking a reverse view, information appears as the eternal manifestation of knowledge in which from it is named explicit or embodied knowledge. Hence the study of time-space effects on knowledge also relevant to information science.

Change and knowledge are always tide to time and are bound to an activity, a phenomenon or a field, change acting on a given system modifies a replaces the system's existing knowledge. Knowledge passed on us from past generations, culture and societies reaching with the present minds creates new knowledge. Information which is the result of a meaningful response to a stimulus when correlated, synthesized and stratified during the course of time becomes knowledge. Knowledge structure giving rise to a new structure, ie., new knowledge. Knowledge put to action under right conditions leads to change. Changes are of two types naturally occurring and human initiated. Human-initiated changes are intended changes set to achieve a purpose, the representation of which results in new knowledge. All such changes occur in a time-space frame work. The time or period characteristic of information or knowledge enables us to reconstruct the evolution of man as a social being and his world from pre-historic times to the present encompassing various civilizations and cultures.

Change is inevitable for anything or any system; change can be social, political or economical. Change can be caused due to internal or external force or factor. Whatever be the causes, the institution should have an effective management to adopt and plan for the changes. To envisage that plan it is very essentially needed correct knowledge and information.

There has been a big change in the way of information is accessed due to telecommunication networks. This phenomenon has resulted in the formulation of networks. The phenomena have resulted in the formation networks of local, regional, national and international levels. In the present information society, the value of information has increased multifold, demanding efficient handling of information which has to be processed and repacked suit the intellectual needs of the users. Further, the innovation in the telecommunication technology has made possible the transmission of information at such a great speed that the universe has been labeled as 'Global village'.

2. Information Explosion and Information Society

Today we are living in an information age. After the second world war, most of the industrialized countries achieved progress in the field of science and technology. As a result, we had an incredible growth of literature which eventually caused " information explosion." The amount of scholarly literature published continues to grow. The world in which we are living now in an information world or age of information which is dynamic and complex. Information is expanding by day, if not by the hour. Quantifying the amount of information that exists in the world is difficult. It is estimated that information is growing at a compounded annual rate of 60%. It is no more a world in which information is structured, homogeneous, with emphasis laid

on information leading to knowledge and scholarship. Any definition of information science to be valid today it has to accept and reflect upon the nature, form and complexities of information and information system existing in the digital era.

The traditional knowledge acquisition and communication methods or information handling methods used for the organization and retrieval of information failed in exercising control over the information explosion. As such, it has become very difficult to manage the information manually due to the exponential growth of literature and publication pollution. The traditional information handlers working in traditional set up are over-burdened with the size and complexity of the growing collections and related files. Files and retrieval devices developed over the years in information centres are found inadequate to meet the present information demands of the users. The information handlers are badly in need of something which will enhance the speed of work, keep the files over up to date and compact, retrieve information for the increasing number of users instantaneously in a variety of ways and formats.

The problem of providing information in time is not due to lack of information, but the way in which it is handled to enable the user to fulfill his needs. The traditional way of information handling methods have become almost ineffective in providing the specific information of an individual's

interest. To overcome this problems, the libraries, information and documentation centres (LIBIDOC) ought to change their attitude towards the information handling. The user community is also expected to change their methodology, attitude and approach to information searching. Information technology applications based information handling is a viable solution in this direction.

The information explosion has to be considered both as the result and as the cause of the result and the research explosion characterized by the experimental growth of research increase in the volume published and unpublished information sources. Sources posed difficulties in the handling of the mass of the literature for libraries, information specialists and their institutions. The rapidly growing flow of information demanded the institutions to provide effective service to users. The smooth functioning of this information literacy should be included in the modern way of knowledge acquisition and communication. An information culture should be developed. There should be an efficient, information handling and information processing systematic co-operation of libraries and information centres has led to the emergence of local, national and international information systems and networks.

3. Information Literacy and Information Culture

The current era is called as information or information age. In this

information age tremendous flow of information is emerging in all emerging in all fields through out of the world. The present society is becoming now information society. Most of the people in this information society is becoming fluent with information and information technology. The traditional method of information processing and handling have become inadequate and in effective. To get rid of this complicated problem, a scientific and an efficient method is necessary. For the rapidly growing flow of information demand, an information literacy skill should be included provide effective service to users. The smooth functioning of this information literacy, an information culture should be developed.

Information literacy is the ability to find, evaluate, use and communicate information in all its various formats, includes the ability to effectively identify, access, evaluate and make use of information in its various formats, and to choose the appropriate medium for communication. It also encompasses knowledge and attitudes related the ethical and social issues surrounding information and information technology. A report of American Library Association Committee recommends that "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information." (American Library Association presidential committee on information literacy, final report, 1989, p.1-4). An information literate person is one who has the following capabilities.

- Recognizes that accurate and complete information is the basis for intelligent decision making process.
- Recognizes the need for information.
- Formulate questions based on information needs.
- Identifies potential sources of information.
- Develops sources of information including computer based and other technologies.
- Evaluate information
- Organizes information for practical application.
- Integrate new information into an existing body of knowledge.
- Uses information in critical thinking and problem solving.

According to California Academic and Research Libraries Task Force report, individuals are information literate if they; recognize that they have a need for information; possess the knowledge and skills that enable them to discover where and how to find the information are seeking; are comfortable using necessary tools to find, modify and assimilate that information into another work and can critically evaluate and synthesize the information they find to understand the social, economic and political implications of the information." (California Academic and Research Libraries Task Force, 1997. Task force to recommended information literacy standards p. 6,31, 149-200).

Information literate people are competent, independent learners. They display confidence in their ability to problems and know what is relevant information. They manage technological tools to access information and to communicate. They should have the capabilities to handle any type of information whether information comes from computer, a book, a government agency, a film, a conversation, a poster, or any number of other possible sources, inherent in the concept of information literacy is the ability to dissect and understand what we on the page or the television screen in posters, pictures and other images, as well as what we hear. They operate comfortably institutions where there are multiple answers, as well as those who no answers. They hold high standards for their work and create quantity products. These learners are flexible can adopt to change and are able to function independently and in groups. If we are to teach information literacy, we must teach learners to sort, to discriminate, to select and to analyze the array of messages that are presented. Information literacy should be a part of every student's educational experience.

Implicit in full understanding of information literacy is t he realization that several conditions must be simultaneously present. First, someone must desire to know use analytic skills to formulate questions, identify research methodologies and utilize critical skills to evaluate experiments and experimental results. Second, the person must possess the skills to search for

answers to those questions in increasing diversal and complex ways. Third, once person has identified what is sought, be able to access it.

Information literacy extends into the realms of critical thinking and ethical usage of information. Information can empower and enable us or overwhelm and confuses us. We are challenged on a daily basis to negotiate through vast amount of information in a variety of formats. Information may be presented in a number of formats, from the simple to complex and may include printed words, illustrations, photo graphs, charts, graphs, tables, multimedia, sound recordings, computer graphics or animation. In the future, there may be other formats for presenting informal information-formats not yet imagined. It is important that we consider all of these possibilities where we use the term "information" and that we do not be tied to the numbers. Using of information in a variety of formats requires literacy's beyond the basic ones of reading and writing. To negotiate complex information formats, we must also be skilled in other visual media, computer, network and of course basic literacy. The basic literacy skills of efficiently and effectively accessing, evaluating and using information from a variety of sources are essential for survival in the information age. Today's information transcends all political, social and economic boundaries. The global nature of human interaction makes the ability to access and use information crucial. Differences in crucial orientation towards information and symbols systems make the managements of information complex and challenging current and

future reform efforts should address the rapidly changing nature of information and emerging information technologies. Information literacy, the ability to locate, process and use information effectively equips individuals to take advantages of the opportunities inherent in the global information society.

The concept "Information literacy" was first introduced in 1974 by Paul Zurkowski, United states.

4. Information is regarded as a social right of the individual and as a resource for the societal growth and development

The current era is called as 'information area'. Information is considered as the fifth need of man after air, water, food and shelter. The present day society is called "paperless society" where the information plays a vital role to all activities of the individual. The present day need is that how speedily and efficiently information could be communicated to the society. Along with fiber and wireless communications, the information compression techniques are heralding an age of cheap and unlimited communication which characterized as communication networks with universal accessibility are on hand. Such a communication revolution centre around the telecommunication and information enables us to reach even the most remote and inaccessible regions of the globe. The scientific application of information has necessible to keep abreast of information with working in advanced and frontier areas.

Hence it is essential that enormous amount of information have to be closely scanned and collected for which the use of computers is envisaged for storage, retrieval and data scanning.

The information is valuable only if it is retrieved timely and cost effectively. It is striking in the case of knowledge acquisition process because the impact of intelligently organized and delivered information on the life of people is perceptible in the short run without waiting for a long gestation period. Furthermore it is addressed to meet the vital and urgent problems of people. In this age of information explosion keeping track of information resources and managing the same are the key to achievement and success. Rational and best use of proper information leads to new level of knowledge which in turn adds to the existing part of information for further use.

Today we are living in the information age, post-industrial age is called information age. In this information age we all have become information oriented consciously or unconsciously. In the present day world context there is an ever increasing need or demand to acquire and utilize information in the most efficient and effective way. The utilization of information depends on its provision and accessibility to its users. The information is only valuable if it is given in timely failure to provide information in time may ultimately cause individual as well as national waste in many aspects. The availability of information at right time and in the desired from is one of the prime

importance in the development of knowledge as well as developmental activities.

Human progress has become possible of the existence and awareness of knowledge or information created in past. Knowledge passed on to us from past generations, culture and societies reacting with the present minds creates new knowledge.

Man is a decision maker and knowledge or information is the element for the decision making process. To be able to make a wise decision one should be available to the decision maker unless relevant information is available, the decision making also depends on the information made available being relevant, accurate and up-to-date. Access on precise reliable information of the right, time can avoid wastage of resources like time, money and labour of gets right and timely information one can make some fruitful decisions. Information is playing an increasing important role in the work and personal lives of citizens. It is a vital component development of critical thinking and consequently access to the ever-increasing body of available information is vital to the development of student's potentials.

Free and universal access to information is said to be the social right of individuals. It enables the individuals to secure living conditions and opportunities by improving one's capabilities and skills, one by utilizing the resources which are available. It also enriches the life of the individual and

community. The state has a duty to provide conditions for the realisation of this right by the individuals. Access to information has become of fundamental human right. Information and communication technology media is a powerful tool which is available the state to meet this enormous task of provision of conditions for free and universal access to information. The modern libraries and information centres can come to realise this enormous taks of provision of conditions for free and universal access to information and to rescue of readers by removing the possible barriers and thus facilitating free communication where in the right reader is connected with the right personal way. The modern library and information centres provide quick and easy services to access information and ensure better and more intensive utilization of the available information.

Information or knowledge acts as the hemoglobin in the development of human society. It is an important resource a valuable input and power for societal growth and development. It is the major source on which qualitative and quantitative development of our society is based. It is a vital national resource for developing countries like India. All our economic and social progress depends up on the transfer of scientific and technical information. Its sharing is necessary for national development and local development. It acts as an input to activation. It is a major contributor in the socio-economic and cultural development of society at the individual, institutional and governmental levels. Now we are the beginning of electronic revolution.

Therefore scientific and technical information is very necessary in today's world of mechanisation and computerisation.

Knowledge or information is the basic management tool for national planning. If a nation has to develop the necessary information is very essential. It is a well-known fact that, a country which it rich in formation is rich in economic spheres too. It is the basic resource and link between a variety of intellectual and materialistic activities. It is the basic resource for the science and technological development and the basic raw material for the development and establishment of an industry. It is a very vital component to modern research in science and technology. Population pressure and social pressures are continuously accelerating the pace of research. Research provides new knowledge and information and add existing knowledge. Research is performed to solve social problems to conduct a research the information is an inevitable factor. It has become an essential part of the the research proceedings.

The present information age is characterized by a society which is conscious of the value of information and its use. It has become an essential part of everyone's daily activities and a social necessity. It also plays a major role in the socio economic and cultural growth and progress of a country. The information revolution is the third major force following social and economical revolutions that is shaping, the way of living in the civilized

world. It helps in establishing past, present and future aspect of human civilization. Today every country is aiming at collecting organising and disseminating information to the users for an overall development. Recent revolution in the field of information is creating not only wonders but also posing a threat because of the changes, development and trends taking place in the information world.

5. The significant Role and Influence of Communication in a Globalized Age

The change which we are talking about can be seen in most of the countries around the world. As a result, market system became more free, extensive and powerful. The governments control over the market weakened rapidly. Many new sectors came under the purview of market. Market as a solution to all the issues facing the economy become a widespread notion. The process of including these aspects and the political and economic system gaining strength around the world is called globalization.

The following factors led to the acceleration of the process of globalization.

- International organizations and international agreements - world trade organization (WTO)
- International Monetary Fund (IMF): World Bank free trade agreements.

- Multi National Companies (MNCs): Foreign investment.
- Growth of information technology- Internet
- Changes in Information and broad casting -TV, Mobile phones.
- Progress in transport - Jet planes, container ships.

The phase after industrial revolution saw the strengthening of the capitalist mode of production. New technologies, inventions, new production techniques etc, all led to the rapid growth of Western Countries. Colonization process led these Western countries to expand their influence over other countries.

The capitalist countries implemented policies which gave maximum freedom to conduct economic transactions for individuals and institutions. This led to the strengthening of colonial exploitation. The Great Depression of 1930's led these capitalist countries to one of its biggest crisis. To overcome this major crisis, the government imposed restrictions on activities. The Soviet Union which followed a socialist system challenged the dominance of capitalism. To counter this challenge, the capitalist countries started implementing many welfare schemes with the end of Second World War, the United State emerged as the dominant country overcoming the challenge from European Countries in the capitalist system.

The 1970s also saw such a crisis affecting the nations of the world. The capitalist countries tried to come out of this crisis by strengthening the

market system. This led to the widening of liberalization and privatization. The fall of the Soviet Union led to further strengthening of the dominance of the United States. This paved the way for the acceleration of the economic reforms which were initiated to strengthen the market system. The monetary reforms initiated as a part of the economic reforms led to the economic crisis of 2008.

The following results are taken place due to the impact of globalization.

- Foreign direct investment became extensive.
- Trade of goods and services across the boarders became free from restrictions.
- Technology transfers among country's were also liberalized immediate communication through information and communication technology anywhere in the world.
- International relationships became more and more than the former days.
- Economic reforms and strengthening of market system.
- Avoided trade restrictions among countries and opening of market for all countries.
- Increased the interdependency among the countries.

Globalization is made possible through the process of avoiding trade restrictions among countries and opening up the market for all countries.

The very speed of progress, the rapid transformation from traditional to modern social and economic formations, the growth of science and technology etc. are rapidly advanced in the period of globalization in all over the world.

Communication

Communication is an activity, a process of transmitting the ideas generated by the human mind, following an event or a fact, it is an essential component, without proper communication, information cannot reach its defined destination. Human communication has progressed through four distinct phases. Each phase is associated with a specific form of communication. The first phase began with verbal communication in which development of language took place. The second phase was the era of written communication. In the third phase, the printing era began with Guttenberg and his bible in 1456. The fourth phase was the age of Tele communications which began with Morse's Telegraph and was perpetuated by Marconi's wireless. Tele communication was the fastest means among the forms of communication until the advent of communication.

The three basic elements of communication process are the source, the message and the receiver. Fundamentally, communication involves the

exchange of meaningful symbols (Message) among sources and receivers via a medium. Communication is a dynamic process by which we exchange messages to satisfy our needs. Communication is closely related to information. In the present day context the crisis of information explosion and increase in research work has added to the problem. The only way to strike a balance between the two ie., the literature explosion and the rising need for information, is the expeditions communication of information, availing the new technologies, to meet the increasing demands communication has become an essential part of the modern society. Today, everything depends directly on how speedily things are communicated, whether it is the new technologies or economic, political educational issues or weather forecasts; all these affect our day-to-day life. Information communicated at a particular time has its own value, which if not received in time may be useless or cause some mishap. Moreover, as progress of any kind is linked with the availability of right information at right time so is its dissemination which is equal importance. There should be free flow of information and any barriers in its free flow should be removed.

The term communication is derived from the Latin word 'Communis' which means common. When we communicate with someone, we try to establish a certain degree of commonness by sharing some information, an idea or an attitude. Communication therefore refers to transmission or exchange of information, message etc. The Oxford English dictionary

defines communication as "The imparting, conveying or exchanging of ideas and knowledge whether by speech, writing or sings." In the Columbia Encyclopedia of communication, it is defined as "the transfer of thoughts and messages, contrasted with transportation of goods and persons."

Information and communication are two interlinked terms in the sense that without information communication is not possible. It modifies the disposition of both the parties who part take in it. That is in this process, two or more people share their experiences which increase the knowledge of both parties. Information and communication in a broad sense of the term, includes not merely transfer of information in the conventional sense, but also the expression of feelings, wishes, commands, desires or whatever it may be. It covers both, the use of natural language as well as voluntary or involuntary feelings, emotions, gestures etc. Information plays an important role in the work of scientists, technologists, managers, planners etc.

In the popularly understood sense of the term communication refers to anything from a face-to-face conversation over the telephone, correspondence between friends and the transmission of programmers on live television broadcast via communication satellite received by millions of persons. When social interaction involves the transmission of meanings through the use of symbols, it is known as communication. Communication is the transmission of information, ideal, emotional skills etc. It is the act or process of transmission that is usually called communication.

Communication takes place when people send or receive message of various kinds. It is not only human beings who communicate, the animals also transmit and receive messages largely by instinct; However, man has been described as the "Communicating Animal" with a variety of process of communication. Human communication is a complex activity. We are usually not aware of its complexity as we talk listen to the radio etc. The fact of the matter is that we are actually communicating with each other during most of our walking life.

History and development of communication has been taken many forms throughout the history of mankind. Sign language or expressive body language was perhaps the earliest form of communication. Such forms of communication are still used by the deafs and dumbs. With the evolution of language, spoken words became the common form of communication. However, before the invention of telephone, it was necessary for two persons to be face-to-face in order to communicate with each other. To overcome this limitation, drum beats, smoke signals etc were used to send message at a distance, instead of people delivering them. These methods also had severe limitations in the sense that messages were affected by wind and other natural demands. It was also often not possible to verify whether the receiver had received the correct message or not.

The invention of writing system by the ancient Egyptians and the people Near East (five thousand years ago) and after that the invention of the

alphabet (about three thousand years ago), made tremendous impact on the communication process. With these inventions the entire concept of communication changed.

Written communication enables the record of the information to be stored. The earliest form of written communication was through the cave printings, with the passage of time, it was followed by the invention of more sophisticated technology such as day tables, ink papyrus, movable type and the telegraph system. Telephones enables people communicate over a distance and mail services enable stored images to be transported. These two are among the communication methods of communication today.

Interest in communication has been stimulated by advances in science and technology. The first and most dramatic examples of the inventions in the field of communication as a result of technological ingenuity was the telegraph and telephone, followed by others like wireless, audio and telephoto devices. The development of popular news papers and periodical broadcasting, motion pictures and television led to institutional and cultural, innovations that permitted efficient and rapid communication between a few individuals as well as among large population. Innovation of such devices is responsible for the rise and social power of the new phenomena known as mass communication.

As a result of the insatiable demand for high speed communication of information and data of all kinds newer technologies are emerging at a tremendous rate. These newer technologies are creating a worldwide communication infrastructure transmitting not just voice but text, data and images as well.

Elements of Communication process

Communication is an endless and continuous process in which the entire humanity is involved. The entire communication system comprises of the following basic elements.

- Information sources or communicator.
- Encoder
- Message
- Communication Channel
- Noise
- Decoder
- Receiver or Destination

Information sources or Communicator

Information source or communicator is the point at which information message or the news originates. A source could be a person or an institution. It is the starting point in the communication process. In the case of a book,

the author of the book is the information source. Researchers specialists in different fields of study are the generators of information and hence could be considered as information source.

Encoder

The function of the encoder is to translate the thought or ideas into words, signs, signals etc., which combined together constitute a message or an information. By giving a class or subject-heading to a book we actually encode the content of book.

Message

Message is the meaningful representation of original thought of the information source. Message could be considered as the verbalization of the ideas through language. However, message could be non-verbal also in the form of signs, symbols, gestures etc. The information contained in a book or an article in a journal represents the message of the author or in other words, his thought content.

Communication Channel

The medium through which a message is sent is called channel. In other words, channels are the transmission media through which the message travels from the source of the destination. In the case of written communication, pen and pencil is the transmission channel. In the case of

oral communication, the channel is the air surrounding the speaker and the listener. In the radio broadcasting, radio waves constitute the transmission channel. Electro-magnetic transmission channels could be classified as bounded media and free space banded media includes twitted pair of wires, coaxial cables, optical fibers etc. 'Free space' is utilized for transmission between -nas or radar sources and sensors.

Noise

Noise in the communication process refers to anything that interferes with the message or information to be communicated in any way. All communication process or systems are subject to this unwanted disturbance or interference, which is not part of the signal but can cause if to break up or otherwise degrade it.

Decoder

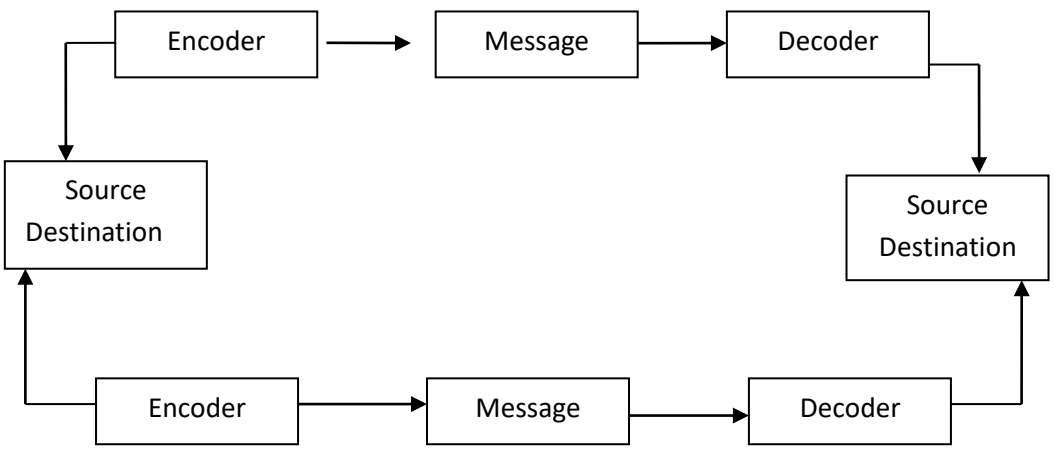
The process of translation of the message or information by the receiver is known as decoder. The function of the decoder is, therefore to interpret the information or message. A decoder could be anything ranging from human being, telephone receiver to computers. In the case of electromagnetic transfer of information through various types of channels, the message is transformed into signals before being transferred. At the receiverend end; the signals need to be transformed back into original from which is done by the decoder.

Receiver or Destination

The receiver is the person or equipment who receives the message transmitted by the source. In oral communication on the listener is the receiver of the message. In the case of electromagnetic communication system, the telephone, radio, tele-printer, television, computer etc. Constitute the receiver of information.

In the case of oral communication the listener is the receiver as well as the final destination in the communication process. However, in the case of electromagnetic communication process, equipments like, telephone receiver, television set, computers etc are the receivers but the final destination is the person or group of person for whom the message is mount. The final destination would be a single person in the case of interpersonal communication, or it could be large number of person as in the case of mass communication.

Diagram: Cycle of elements of communication process



Communication Media

A media is a channel throng which the message or information are transferred to the receiver. A medium could be a spoken word or printed word or if could be in the form of electronic message with the advancements in science and technology, communication of information is gaining its importance. A number of communication media have been developed. Communication media can be broadly classified into two categories. Print media and electronic media.

Print Media

Printed words are the messages prepared for specific agencies printed media includes; newspapers magazines, learned periodicals, books, conference proceedings etc. The function of these media is to provide information and in certain cases provide entertainment as well. The audience for these media could be specialized once in certain cases or it could be large and diverse as in the case of news papers magazines etc.

News papers

Newspapers have a special role of delivering information on news to the citizens in a country. News papers are read by the general public, published on a regular basis usually or weekly they also interpret events behind the news, such as social trends, political development etc. Apart from

this, newspapers also provide useful information such as stock market prices, weather reports etc. They are also a popular source of reading for entertainment. Newspaper is the cheapest and most efficient mass communication media.

Magazines

Magazines like newspapers and a popular kind of reading matter which are issued on regular basis weekly, fortnightly, monthly etc. unlike most newspapers, magazines are usually printed on glossy paper with lots of colour photographs, drawing and other illustrations. A magazine is published less frequently than a newspaper. It is also published in a different format. Since they are published less often than newspapers, magazines look into issues and situations more carefully. In magazines there is less concern for citing the de tails of the day's events and more for interpreting and correlating topics in a broad context magazines are generally meant for mass circulation. However, some concentrate on specialized topics, eg:- nature, computer, today etc. magazines are meant for special target groups eg: Femina, woman's Era etc. (for women) magazines like newspapers also have dual functions, ie., provision of information and entertainment.

Learned Periodicals

Learned periodicals are specialized journals not meant for mass circulation as is the case with magazines. They deal with specialized subjects

are the primary aim. Sources of information usually devoted to reporting of original research periodical articles are the main means of communication for the exchange of information in different areas of knowledge. Periodicals are, therefore, means for specialized group of persons and serve educational and research purpose.

Books

Books share with other print media the functions of informing, persuading and entertaining. They differ from the other print media in that they are bound and are made to last. Since books take a year or more to produce, the information provided in them is not recent or up-to-date. However, if explores a topic or idea in depth. Books have a smaller audience than magazines and newspapers, most books usually sell only a few thousand copies. Fiction, reference books, text books, research monographs are some examples of different types of books.

Apart from these four basic types of print media we have a variety of other types viz., indexing and abstracting periodicals, directories, conference proceeding etc. some of these print media do not communicate information directly but they provide information about where to find information from primary sources like books, periodicals etc.

Even though faced with the challenge of electronic media print media still remains a powerful communication media. Whether in the future words

will be printed on paper or displayed on computer terminals is not particularly important, but the survival of print media seems likely because of three features; portability, permanence and cost-effectiveness.

Electronic Media

Electronic media may be broadly categorized as person-to-person communication and broadcasting media. Person-to-person communication media refers to such media where messages are sent by such means as telephone, telegraph, facsimile etc. Broadcasting which is carried out by radio and television provides with news and entertainment to the general public. Electronic Medias are mainly the following.

Telegraph

Telegraph was the earliest device for modern telecommunication. The electric telegraph was invented by the American scientist Samuel Morse in the 1830's with the invention of telegraph, the speed of human communication leapt to the speed of light. Earlier it was a laborious and slow method of information transfer. It involved the manual keying of messages character by using Morse code. This code is built up of short and long pulses of current in the telegraph wire with the transfer's Morse key. A major advance was the development of the Bardot code system at the start of this century. The sender could use a sort of typewriter keyboard, each different key press would automatically generate a five bit combination (word or current pulses or pulse

absence). At the receiving end a special output unit could reproduce the message either by punching holes in codes patterns in a paper tape or by putting readable characters directly on to a paper tape.

Telephone

The telephone differs from the telegraph mainly in that the electrical current carries the much more complex patterns of the human voice over the wire. The development of the telephone represented a solution to the technological problem of how to convert the sound patterns of voice into electrical patterns. Telephone is one of the largest established methods of electronic information transfer. Previously, telephone communication between two people could take place only through a special cable link. A major advance in telephone is the concept of multiplexing. This allows a number of different signals to pass through the same links at the same time.

Broadcasting Media

Broadcasting makes long distance message transmission between sources and receives without the need of transportation or a direct physical (wire) link. In case of broadcasting, the message is transmitted in the form of energy was in the electromagnetic spectrum. Broadcasting includes mass communication devices like radio and television in which messagfes are sent out regularly by professional communicators through electronic media to a large and diverse audience.

Broad casting as a technology means transmission of electronically generated radio waves to receiving devices. The radio and television broadcasting stations are centres for transmission. Recent development in the broadcasting media is the use of satellite communication systems. Space satellite now provide a worldwide television and telephone network that links nearly every country on the globe.

Electronic-Mail

Electronic mail is primarily an alternative to the conventional postal mail service. Electronic mail is the transmission of message or documents in an electronic form. In most electronic-mail systems, transmission is via a telecommunication network designed for data transmission.

Input and output from an Electronic-Mail system can be a via a video terminal or a word processor with printer, a facsimile machine or any data terminal including computer vision and voice communication systems. The Electronic Mail often assumed to refer to computer-based to refer to computer-based mail box systems but in actual practice encompasses diverse technologies such as facsimile transmission Tele text and video text. The greatest advantage of Electronic mail as a communication media is that if overcomes the time delay associated with mailing letters. In this system mail arrives in minutes. The other advantages are that it is economical and accurate.

Video text and Tele text

Both video text and Tele text are interactive information services that allow individuals to request frames of information, but they are slightly different technologies. Tele text is delivered over the air while video text is delivered by wire. In video text a person can request for information from a central computer for delivery over telephone or cable television lines. Tele cast in contrast is a system that enables the users to view on request frames of information already being transmitted but invisible on their television screens. In video text, information is stored for transmission at the subscriber's request. In Tele text, information already is there and subject to viewing on request. The terms video text and Tele text are often confused. Video text is a generic term that refers to both systems. Tele text and video text are the most radical change of the new communication technologies which have brought the powers of the computer to the home to set and have transformed the entertainment medium into an information applicance.

Computer Communication

An electronic computer is the prime example of a digital communication device. Micro-computer based communication functions usually full in to the basic categories viz., computer conferencing, database searching and electronic media. Net work is used for communication between a number of computers and between terminals and a computer. For the

sharing of information between distance users, use is made of radio, microwave, light or electric current links, through space, metal cables or optical fibres.

When computers communicate with one another over telephone lines, the message is sent in a special code. Once the message is in the other computer system, it can be decoded a visual or printed form.

Cable TV Systems

A cable TV system is a wired communication system of high capacity that flows from a central source via a major distribution cable to neighbourhood lines and eventually to the line into the house. A cable TV system is designed to alignment or substitute for over the air distribution of television signals.

Many types of communication signals can be incorported into a cable television network, including music channels, special information channels and all types of text service systems with interactive capability used for home, banking of fire force service, police and medical emergency services.

Electronically, humanity has progressed from the wired era of telephone and telegraph to the wireless era of broad casting and now stands on the threshold of the era of integrated grid. Integrated grid refers to the communication infrastructure now taking shape in post-industrial societies.

The term encompasses overhead satellites as well as microwave and fibre optic networks on earth. The new technology of communications are extensions of the traditional media. Most of these technologies are the convergence of advances in telecommunications and computer systems.

Libraries and information centres have a dominant role in information servicing and communication process. Libraries represent a major storehouse of human knowledge. Their value rests not merely on their facility to store information but to disseminate it in optimum quality and quantities to any information-seeking community. Libraries and information centres are the vital link between the producers and users of information. They are the vital components in the information communication chain, where the authors and writers are the originators of information and publishers editors etc, as the transmitters of information (for published documents). The primary documents eg: bibliography, indexing and abstracting sources etc and teritary documents eg: directories, bibliography of bibliographes etc, constitute the means access to information that is being transmitted. These sources of information need to be channelled through some medium to reach users of information. The libraries and information centres, in this respect constitute the channels of communication. The role of libraries and information centres is now getting invigorated through the application of modern technology to all their activities. Now their role is not merely limited as communication link is between the producers and users of information but also between institutions,

communities and even between countries as library networks are currently getting design of and operated. Recent development in telecommunications, computers and networks are changing the way libraries are organized and operated and serve users. Libraries can now tap the resources of other libraries through resource sharing networks and information to a wide range of users or get access from any place irrespective of distance and locations.

6. Globalization of culture and intercultural communication in an increasing globalizing world

The globalization of culture has had the effect of shaping new forma of world interdependence which are shaped out of multiple overlappinel... identities. The present world situation is urgent enough to demand, not merely the silence... of old oppressive voices. What is needed in the service of achieving greater mutual understanding. In an increasing globalizing world, the development in travel and transport, information and communication technology exchange of information across cultural and linguistic groups, and across national borders has explored multi-fold in many languages and embodied in and expressed through different media. Such exchanges are welcome as the message are correctly interpreted and understood by the recipients. But this may not be the case all the time. A misinterpreted information (deliberately or otherwise) leads to misunderstanding and conflict between individuals between groups and

between nations. Hence UNESCO's chapter line says "Conflict arises in the mind of men" (UNESCO's chapter lines, United Nations Organizations Chapter).

Therefore it is an important function of information systems and services to minimize, if not totally avoid the chances of such misunderstanding by developing and using the appropriate means and method to present whenever and whatever necessary the information as intended or understood by the author or communicator and show the closes equivalent in the language and culture of the recipient. In other words information or knowledge organizing tools should be so designed to enable. Effective and efficient search and receival of information to meet the needs of the users in the present and in future even in multilingual and multicultural environment.

Information technology goes beyond computers. It includes network that connect them, electronic data bases and other electromagnetic storage of data and increasing with convergence of media, it includes all telecommunications not just transmission of data, but also video, voice and video generally progress in information technology continues at a super-exponential growth rate. This has been true for more than one hundred years and over many different generations of computing technology-mechanical, vacuum tube- transistor, integrated circuit etc. The progress has come about through improvements of existing technologies as well as the discovery of

new ways of doing things. Developments in communication technologies have more influence, with the consequence that online discussions and E-resources dominate information centres and libraries.

During this period of time numerous researches and academicians have developed a variety of techniques, methodologies and measurement tools have allowed them to develop, deliver and at the same time evaluate the effectiveness of several areas of networking.

In ancient times libraries and information centres were regarded as store houses of knowledge and the service aspect was neglected largely. After the Second World War, dissemination of information has gained more significance. The society has become more information conscious. To serve the information needs of diverse population, different types of information centres and communication technologies have emerged. The innovation in information technology has brought channels in communication technologies and information service. Today it has become a common place for computer applications in information processing and retrieval. The application of computers to information storage and retrieval has brought new possibilities of automatic indexing and free text searching for the words or phrases on the subject which is likely to occur in any document and the computer is set to read entire document for the appropriate words or phrases. The development of digital representation of information has made the computer an effective

tool for data processing and the qualitative changes in design and architecture of computers and their software have enlarged the sphere of computer applications in library and information centres. The computer application in information servicing has the ability to handle and manipulate large volumes of data from different sources and many formats. It makes possible maintenance of databases and sharing of data from different sources.

The growing development of user friendly software packages makes it easy using computers without even knowing and high levels languages. The technological innovations like networking, internet, e-mail service etc have made information accessible to the user community world over, promising the concept of a global village. The world has been witnessing information explosion for the several decades. Today is an information age and tremendous flow of information, emerging in all fields throughout the world. The winds of information technology are blowing and making some changes in the existing conditions in information accessing and communication process in this globalised era. The idea of increasing the effectiveness of information exchange by sharing the work nationally and internationally is fully recognized by the information professionals information seekers and information producers. An appropriate use of information and communication technology in the field of information accessing and communication process understand the potentiality of information technology in a globalization age.

We are witnessing revolutionary developments in information accessing and communication processing. It is a three-fold process. It has been observed that "The growing power the global cyber system to solve human problems boggles the imagination. Today's super computer can perform up to 6 billion calculations per second; but scientists now anticipate 'pataflops' computing, a level of performance 10,000 times greater than fastest of today's machines." (Cordish, Edwar, "The cyber Future 92 ways our lives will change change by the year 2025" The futurist, January, February 1996, p.2).

No wonder we are flooded by information relating to all domains of human life. The past few decades have witnessed knowledge and information explosion. The world over under these circumstances, resource sharing and co-operative functioning of libraries and information centres through networking becomes vital. Efficient resource sharing can be achieved by using recent advances in information and communication technologies. Networking of libraries and information centres through local area networks, metropolitan networks wide area net works and so on.

7. Communicative ethics and social interaction in a technological information age

As the universalistic elements in the theories of communication and social evolution have come to the fore, the situational and practical aspects of social inquiry have declined in systematic importance. This shift in direction

has implications which merge with some of those of the Frankfurt analysis. Critique is addressed to mankind as such and not any particular class or group. While this position follows in part, from some convincing arguments against orthodox Marxist expectations, it also follows, much more disconcertingly, from the categorical system itself. Habermas's programme, at least as it is articulated to date, diverts, attention away from the analysis of concrete social and political situations where particular interests weigh rather more heavily than universal species. The relation of critique and history, in Habermas's model, the ideal speech situation is the foundation for criticism. While the critical theories have convincingly exposed some of the major flaws of certain traditional and conventional approaches to philosophy and social investigations, they have adequately demonstrated that critical theory has a special theoretical status, that is they have resolved a whole series of epistemological and methodological issues they intended to settle or render redundant.

Jurgen Habermas is a Marxian thinker who belongs to Frankfurt school. He gave a new direction to the critical thinking. The issues raised by the members of the Frankfurt school and Habermas are of the profound impact and importance to philosophy, of conventional school of social science and of orthodox Marxian provide a major challenge to writers in these areas. Although the various models of critical theory denote satisfactorily resolve many of the questions which they raise, nevertheless the way connections are

established between apparently disparate traditions of thought and field of enquiry, the constant attention to both philosophical and empirical problems, the concern with theory and practice – all indicate in many opinion, that critical theory constitutes one of major sources for contemporary social and political thought.

The critical theory of Hubermas stands out from most of what new passes for political and social theory in its ability to engage empirical social science in fruitful dialogue. This dialogue is not just a matter of critical theory issuing philosophical and methodological guidance for the practice of social science. Critical theory can also provide a context and a frame for making source of existing conception of critical theory first crystallized in the 1960 s in the context of his work on the philosophy of social science most notably in "On the Logic of social science and knowledge and Human interests". Habermas also discusses and criticizes this interpretive model of social sciences. Just as he believed that the positivist model is appropriate to the practice of natural science and its ultimate interest in manipulating and controlling the natural world, so Habermas believed that the interpretive model is appropriate to cultural sciences such as history and anthropology whose interest is in grasping and understanding complexes of subjectively formed ways of life. But when it comes to social science, Habermas thought that both technical interest in control and practical interest in understanding are properly subordinate to an emancipating interest in liberation. Habermas's

epistemological work, which culminated in "knowledge and Human interests", can then , provide a context for the interpretation of a number of existing social and political theories, and meta theoretical frame for social science in general.

Habermas's approach to the analysis of capitalism raised a number of parallel considerations. These can be seen most clearly as the crisis argument developed in "Legitimation crisis is the view that the ideology of advanced capitalism is being undermined. This argument is crucial to the contention that in the changing structure of consciousness is the ground for a new principles of organisation can be located. For just as Marx argued that in the womb of the old mode of production a new mode is born and develelops, so Habermas argues that a new and more developed form of consciousness is emerging which will not support capitalist value relations. But within the terms of Habermas's characterisation of the structure of consciousness there is a tendency to over estimate the degree to which liberal capitalist ideology has been eroded, and generalise too reading about complex empirical phenomena.

Habermas views that humans have an interest in controlling and manipulating objects, in their natural environment and that to fulfill this they require knowledge of regularity. The knowledge of regularities and a capacity for prediction seems an important cognitive element of most forms of interpretive knowledge. Habermas's gradual de-emphasis of hermeneutic

motifs in favor of a more strongly theoretical programme. Hermeneutic problems are central to all attenmpts to comprehend law-like regularities in a natural or social phenomena. His approach appears to grant primary simultaneously to the natural conditions of life – the source of interest and origins of the structure of action-and to the historical world in which nature is socially constructed. The thought of cognitive interest appears to entail both an objectivistic ontology of nature and a conception of nature as a mere abstraction required by thought.

By communicate interaction Habermas understands symbolic interaction governed by consensual norms which define reciprocal expectations. The contrast as it is sometimes formulated, is between two distinct types of action; one which is grounded inter subjectivity and is dependent upon convention and institutional structures (interaction) and one does not work. For work is always also interaction. Work presupposes community; it is governed by socially interpreted relations. It is dependent for its organization on (dialogical) rules-on knowing 'how to go on' which are grounded in complexes of speech and action. Although technical rules are crucial elements of instrumental action they are always articulated within the framework of communication the priori of communication. The category of work can only be adequately articulated as a subcategory of interaction.

Communicative interaction seems to unfold in isolation from the world of things. Yet individuals interact through the frame work of social relations

which are inextricably tried to the production and distribution of resources. Habermas's project of developing theory of communication is directed to the explanation the nature of understanding the structure of human reason and the condition of discourse. He is concerned with why and how it is that argument and learning are unavoidable in human life, and with why and how certain position are established as true or correct. But to the extend that he claims that the theory of communicative competence one can specify the contours of the good and true life, and resolve disputes between competers. For once we have opted for argument and discourses has begun, the old questions re-emerge. Does the symmetry requirement set bounds on the kind of theoretical and practical positions that can be established? How do we judge the force of the better argument? What kind of evidence can legitimately be employed? How do we solve disputes between competing positions claiming to establish objective moral and political stances? The symmetry requirement and the notion of the forces of the better argument do not as currently elaborated, resolve the vital concerns.

Habermas has presented one of the most powerful accounts of a discourse-based morality. It is grounded in an understanding of practical reason which explains how the validity of norms can be tested, thereby demonstrating their cognitive character. According to Habermas, valid norms can be freely accepted by all of the individuals who are affected by them. Thus, a society whose institutions and practices were governed by valid

norms would instantiate the ideal of a moral community. Habermas's account is rigorously procedural, unlike theorists such as John Rawls, he does not advance specific norms or principles, nor does he project a vision of a just society. Nevertheless, his project raises the obvious question of what sorts of norms could adequately provide for the "just resolution of conflict". He argues that there are good reasons to believe that moral community, in the sense suggested above, may not be possible is societies characterized by value pluralism and these are the very societies in which discourse ethics is most applicable. His point in making this argument is not that we should abandon the project of a discourse-based ethics, but that we need to recognize what might be called an "agonistic" element or dimension of our moral and political lives. Habermas's conception of communicative ethics is in one way a much more ambitions undertaking than Rawls's, for he seeks to use discourse to establish the moral constraints that Rawls takes for granted.

Habermas's own account of the encroachment of systematic imperative upon the life world, and resistance through new social movements, is couched in fairly general terms. But more focused empirical analysis along these linse is possible. Habermas has argued that the reproduction of the forms of culture social interaction, and individual personality systems takes place through communicative action. These social functions can be performed only as long as there is at least a defacto acceptance of some set of social norms. For may

social interactions, defacto acceptance of norms is sufficient to ensure that the behaviorsm of different actors are coordinated.

A far greater impact is achieved with Habermas's emphasis on general competence embedded in the capacity for language which began around 1970 and culminated in the "Theory of communicative Action" with this turn Habermas himself stands to look a bit more like social scientist and a bit less like a philosopher. Habermas has shown that idea of normative validity is implicit in communicative action, and that challenges to the validity of a particular norms must be met through a process of moral discourse is limited to determining the acceptability of norms or the rules that we have a duty to observe, as opposed to the values or ends that we purse. Although Habermas Separates questions of justice questions of good, he does not make this a radical separation. Both justice and the good, he argues, are rooted in the specific vulnerability of the human sociation.

Morality cannot protect the right of the individual without also protecting the well-being of the community to which he belongs. Because we exist as individuals only through our membership in concrete form of solidarity. Thus the norms that could be reached through discourse must enable individuals to realise certain common values that are central to their way of life. Discourse ethics conceives of a universal communication community that includes all subjects capable of speech and action. It is

incumbent on moral theory to explain and ground the moral point of view. What moral theory can do and should be trusted to do is to clarify the universal core of our moral intuitions and thereby to refute value skepticism.

Beyond providing a frame for the interpretation of social phenomena, Habermas's idea about communicative action can also be used in the evolution of social practices. All such practices are going to be in violation of percepts communicative rationality to greater or lesser degree conversely glimmering of communicative rationality should be apparent in almost all practices. Just like its precursor, the ideal speech situation, communicative rationality is not supposed to be an attainable ideal, but rather a critical principle. Moreover, it is best thought of as simply providing procedural criteria concerning how dispute might be resolved or the conditions under which consensus might be achieved, rather than any theory of human needs or principles for individual conduct and social arrangements. Such criteria can be applied to real world cases ranging from the general to the specific.

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CHAPTER 5

THE DOMINANT ROLE AND IMPACT OF INFORMATION TECHNOLOGY IN THE ACCUMULATION OF KNOWLEDGE AND COMMUNICATION DURING THE PERIOD OF GLOBALIZATION

Information and Communication Technology (ICT) is a modern technology that has influenced in different realms of our social life. In this technological era, our social life doesn't move forward smoothly without the help of Information and Communication Technology (ICT). There are different fields which we get the merit of ICT. Among the various types of ICT, computer and mobile phone are the most commonly used communication devices and the most popular product of ICT.

Information on any subject and the management techniques used in handling information and processing it through electronic media is called information technology. Thus, information technology is electronic technologies used for collection, storing, processing and communicating information.

Information technology involve five different modern technologies (1) electronic technology (2) computer technology including hardware and software (3) communication technology (4) artificial intelligence technology

(5) human machine interface technology. Of these five technologies, computer and communication technology play a dominant role at present. Hence, we can say that information technology these days generally means computers and communications (C & C). Thus information technology is the study or use at process, especially computers and tele communications for sorting, retrieving and disseminating information of all kinds.

Information technology connotes and ensembles the technologies. It is a generic term used to denote all activities connected with computer based processing, storage and transfer of information. They particularly cover the computer's capability to store and process information. Basically information technology is the tool and application support through which or by means of which information is transferred, recorded, edited, stored, manipulated and disseminated. To be precise, information technology habits origin in the technologies related to a restricted view of information, that is the generating, processing, representation and distribution of information.

The word "Information Technology" is combination of two words: one is information the other is 'technology'. "Informatique" in French and "Informatika" in Russian encompasses the notion of information handling and it can be defined accordingly as tools and applications support through which or by means of which information is transferred recorded, edited, stored, manipulated and disseminated with enormous qualities in the minimum

possible time. ALA glossary defines information as "the application of computers and other technologies to the acquisition, organisation, storage, retrieval and disseminations of information.

UNESCO defines information technology and "engineering disciplines and managerial techniques used in information handling and processing their applications; computers and their interaction with men and machines and associated social, economic and cultural matter.

1. Growth and Development of Information Technology

Some of the developments started centuries ago, and their roots can be traced back to ancient civilization. Growth and development of information technology mainly emerged after world war II and since then playing a vital role in the advancement of society. The post world war II period is said to be the harbinger of computers in the field of science and technology. It can be regarded as a major economic factor in the development of post industrial society; the production and sale of information technologies goods have revitalise some sections of economy and to small extent, replaced some of the loses, brought by the decline in manufacturing. Information technology is also an enabling technology, since it can contribute to economic growth and development by reducing costs, improving or extending services, strengthening competitive advances and so on.

Now the world has become a global village. In this modern scientific world, manual handling of information has become more difficult and complicated. Such an old system is not the right kind of vehicle to channelise the information. In order to meet these problems, computerised database and other advanced useful packages have already been set up in advanced countries like USA, UK, Germany, Japan and other developed countries. These innovative computerised software packages are helping the modern information handlers in processing and distributing the information and extending the scope of sophisticated kinds of information technology.

Information technologies as a discipline has witnessed fundamental changes during the past two or three decades, allowing information seekers around the globe to have access to information which two or three decades ago was inaccessible with continued technological innovations in information and communication technology and with on-going discovery and research, into newer and more innovative techniques and applications. The information technologies discipline with continue to witness and explosion of information within this rapidly growing field.

Certainly there have been many technological development in the last 50 years, during which the computer and internet have been evolved. Infact, the impact of computer on teaching and learning has been tremendous. Development in communication technologies have more influence with the

consequences that on-line discussions and e-resources dominate in every field.

The main features of the recent growth and development in information technology can be as follows:

- Increased reliability of hardware and software
- Cheaper data storage
- Increased software knowledge leads to speedier and cheaper computer processing.

These have led to the development of international, national and local online systems, automated library systems, public access catalogues, the electronic journal, electronic knowledge banks, videos for storage of databases picture data banks and CD-Rom etc. There have been a very considerable increase in the amount of information available in the form of full-text documents, bibliographical references, factual and numerical data and at the same time, an increase in the complexity to information handled and storage systems.

Considerable advances have taken place in the field of information technology due to several new inventions emerging regularly in the areas of computers, telecommunications reprography and micrography etc. The advent of digital computers, the achievement of telecommunications and storage

display technologies have opened up new possibilities in dealing with problems arising from collecting, organising and disseminating a vast amount of information.

Growth and development is not automatic, it needs continuous efforts to attain. Most the countries have adopted such sophisticated devices/techniques for automation of their systems and services. Infact, it has become a necessary and inevitable need to provide efficient and fast information service through automation, in the age of information explosion.

2. Information Science and Information Technology

The present age is termed as the age of science and technology, hence we find that science and technology as its impact in every walk of life technology can refer to material objects of use of humanity, such as machines or hardware, but it can also encompasses broader themes, including systems, methods of a organisation and techniques. Technology may be defined as the use of available knowledge and techniques to produce goods and services. It is an all embracing term covering the equipments knowledge, systems and methods used it transforming inputs to output.

Information technology is the produce of information science and technology. Information science comprises a set of practices and related disciplinary studies, which is concerned with the transmission, organisation, storage, retrieval and use of information. Technology is the branch of

knowledge that deals with industrial arts, applied science and engineering etc.

Information technology is the application of various technologies such as computer, telecommunications, fiber optics, laser reprographics and micrographics for effective information handling management. It is a tool that allows us to access, manipulate, transfer evaluate, use and present information and used for information handling and information management. It is the combination of several components of technologies and systems which may be grouped under a computer technology.

- Telecommunication systems and services.
- Micrographical and reprograpic technology.
- Information Storage

In short information technology is the use of computing power; typified field by the ability of machines to contain and handle very large amount of information within comparatively small physical space coupled with ability to extend these reason apparently in depend finitely through a variety of communication devices.

Information and communication technology is the application of various technologies which are the result of the new innovations of the scientifical researchers and experiments. Therefore information and

communication technology is closely related to information science and technology. This relationship cannot be inseperable.

3. Information system and Information organization in a technological age

An information system contains information technological tools and communication technologies. It is the application of various technologies such as computer, telecommunications, fiber optics, lasers, reprographies and micrographics for information handling. Information system can be defined as those process and technologies which are used in acquisition and dissemination of information based on some electronic technologies. Information technologists manage technological tools to access information and to communicate.

Information system and its technology is the greatest enabler. It provides, for those who have access to it, an extension of their powers of perception comprehension, thought, analysis, thought, concentration and articulation, music physical movement, sensing the environment, simulation and communication. Technology in all of its various forms, offers us tools to access manipulate, transform, evaluate, use and present information these information and communication technology and its skills are integrate to the information system.

An information system whether it is automated or manual operated is a time-delay mechanism. Its archive, reposition, database, as also the web, library etc., are collections or hold collection of embodied data and information created and expressed by authors, intended for use in the present and in the future. These information resources are processed, organised catalogued and indexed and manual or machine - assisted retrieval enabled so as to satisfy the laws of library science - every piece of information is useful and every user gets piece of information pinpointed expeditious and exhaustive service, saving the time of user and of the information resource managers. Such collections grow their contents over time. Thus most of the information systems are dynamic. The general concept of information organisation, including forms, structure, classifications and indexing, searching and retrieving, accessing information, quality authorizing and presentation and citation, search engines for text, images, video, audio.

Information in computers, databases, libraries and elsewhere must be structured to be accessible and useful. How the data should be organized and indexed depends critically on how users describe the information sought, and how completely that description can be specified. In addition to locating and structuring information it is important to be able to judge the quality (occurring authoritativeness and so forth) of information both stored and retrieved.

Information system and information organisation is the greatest enabler which provide enough information those who have access it and offers is tools to access, manipulate, use and present information. Information is the basic thing to activate anything. Information is any where must be structured to be accessible and useful. So a well organized information system and information organisation should be maintained in a modern information age.

4. Need of Information Technology Literacy skills in an Information Explosion Age

In this information explosion age our social life is being influenced by information and communication technologies. All our realms of social life is controlled by it. Without the help of it, our social life, can't move forward smoothly. So each individual must have the skill to handle or manage the information and communication technologies equipments. This kind of ability or skill is known as information technology literacy skills. To be information technology literate, a person must be needed information technology literacy skills It is a survival skill in an information explosion age and it is very important for every one because information technology is playing an increasing role in the work and personal lives of citizens.

Information technology literacy skill is an ability to apply information technology in complex and sustained situations, encapsulate higher-level thinking in the context of information technology. It is a new liberal and that

extends from knowing, how to use information and communication technologies and access information to critical reflection on the nature of information itself, its technical infrastructure and its social, cultural and even philosophical context. This kind of skill is the ability to fix evaluate and communicate information in all its various formats. It includes the ability to effectively identify, access, evaluate and make use of information in its various formats, and to choose the appropriate medium for communication.

Skills empower people to manipulate the medium to their advantage and to handle unintended and unexpected problems when they arise. The intellectual capabilities foster more abstract thinking about information and its manipulation. Information technology literacy skills includes the following things.

- Setting up a personal computer
- Using basic operating system features
- Using a word process or to create a text documents
- Using a graphic or artwork package to create illustrations, sliders or their image based expressions of ideas.
- Connecting a computer to a net work
- Using the internet to find information and resources.
- Using a computer to communicate with others.
- Using a spread sheet to model simple process or financial tables.

- Using a database system to set and access useful information
- Using instructional materials to learn how to use new application of features.

The above information and communication technology literacy skill is very essential for a person to be a information technology literate person. In this present information and communication technological age all our social life is controlled by information and communication technology. Our social life cannot function properly without the aid of this technology. Therefore, everyone should have this type of skill to manage or handle the information and communication technology. If a person doesn't have this skill, that person cannot communicate with others efficiently and speedily. It is a survival skill because information and communication technology is playing an increasing and everlasting role in the work and personal lives of all citizens.

5. Being fluent with Information and Communication Technology Is an Essential factor in an Information society

Being fluent with information and communication technology is an essential skill to handle the information technological devices. Without this essential skill, the use and application of technological devices is impossible. It is an unavoidable skill to each person. The fluency with information technology is very useful for information handling and information processing. Information and communication technology intrinsically different

focusing on the manipulation of data to bring about electronically a transmission of data that is stored, retrieval, displayed with enhanced speed and diversity. Its application to the field of acquisition of knowledge and communication is becoming popular because of complexities involved in information storage and retrieval.

Fluency with information technology is the application of wide variety of electronic technologies to the information handling activities. It is in the domain of information services the use or application of various electronic technologies such as compute telecommunications, world processing micrographics reprographics, video reading and other electronic devices for the storage, retrieval, reproduction and dissemination of information in an information service environment. Being fluent with information technology people are those who have learned how to use and apply the information and communication technology devices very efficiently. They are the people prepared for life long, because they can always find the information needed for any time or decision at hand. To be fluent with information and communication technology, a person must be able to recognize when information technology is needed and have the ability to locate, evaluate and use effectively the needed information and communication technology.

Fluency with information technology entails a process of life long learning in which individuals continually apply what they know to adapt to

change and acquire more knowledge to be more effective at applying information technology to their wok and personal lives.

Fluency with information technology requires three kinds of knowledge. Contemporary skills, foundational concept and intellectual capabilities. Contemporary skills are the ability to use today's computer applications enable people to apply information technology immediately. In the present labour market, this skills is an essential component of job readiness. Most importantly, skills provide a store of practical experience on which to build new competence.

Foundational concept is the basic principles and ideas of computers, networks and information under pin the technology. It explain how and why of information technology, and they give insight into its opportunities and limitations. It is the new material for understanding new information technology as it involves.

Intellectual capability is the ability to apply information technology in complex and sustained situations, encapsulate higher-level thinking in the context of information technology. Capabilities empower people to manipulate the medium to their advantage and handle unintended and unexpected problems when they arise. The intellectual capabilities foster more abstract thinking about information and its manipulation.

Between those who search aggressively for opportunities to learn more about information technology and those who choose not to learn anything at all bout information technology, there are many who recognize the potential value of information technology for their everyday lives and how realize that a better understanding of information technology will helpful to them. This realization is based on several factors

- Many who currently use information technology have only a limited understanding of the tools they used and a belief that they are under utilizing them.
- Many citizens do not feel confident or in control when they confronted by information technology and they would like to be more certain of themselves.
- They have been impressive claims for the potential of information technology and many would like to realise those benefits.
- There is a concern on the part of some citizens that changes implied by information technology embody potentials risks to social values, freedoms or economic interests etc., obligating them to become informed.
- Naturally, there is a simple curiosity about how this powerful and pervasive technology works.

Being fluent with information technology is a survival and an

inevitable component in a modern information technological age. Being fluent with information and communication technology people are those who have very deeply learned how to use and apply the information and communication technology devices very efficiently. Those people have the ability to recognize when information technology is useful and to locate, evaluate and use efficiently the necessary information and communication technology. If an individual is being fluent with information and communication technology that individual can continually apply what he know to adapt to change and acquire more knowledge to be more effective of applying information technology to their work and personal lives. There are many individual who recognize the potential value of information and communication technology for their everyday lives and they realize that a better understanding information and communication technology will helpful to them. Such type of people survive in any situation in this information technological age.

6. The Ever increasing Impact of Information Technology In the Acquisition of Knowledge and Communication During the period of Globalization

Information technology is the application of wide variety of electronic technologies to the information handling activities. It is a combination of computer and telecommunications techniques which makes possible new systems and products to help people at work in educational institutions and at

home. In the domain of information services, information technology is meant the use or application of various technologies such as computer, telecommunications, word processing, micrographics, reprographics, video reading and other electronic equipments for the storage, retrieval, reproduction and dissemination of information in an information service environment.

For many people information technology is synonymous with the machines, microcomputers, automated equipments, word processor and the like. For others, the significance of the introduction of a new term information technology is the belief that principles, practice and terminology of information handling can be termed on a unified systematic basis. It is the science of information handling, particularly using computers to support the communication of knowledge in technical, economic and social fields. Information technology could effect society, organisation and people in many ways other than making, jobs more interesting, improving productivity etc.

Information technology is a recent pervasive and comprehensive term. The term information technology is a recent addition to the language of the modern world, although concept is as old as man's desire to communicate. History has recorded three great advances in human communication and each one of these has changed the course of human civilization in a major way. The first was the invention of writing, second was invention of alphabets, and

third was the application of movable type of printing. Recent development has revolutionised computer and communication technologies and have resulted in what has been called the fourth great communication invention.

This new information and communication technology has given birth to many exciting possibilities and opportunities to modern society. It has profoundly changed library and information centres operations, information resources, services and staff skill requirements and expectations of users. Development in information sciences coupled with information technology are means to meet the ever increasing information demand of the modern changing society

In the present information explosion age, the value and need of information has increased largely and the information technology is highly need for information handling and information processing. It is the fastest growing technology during the globalization period. The demand of efficient handling of information which has to be processed and repacked to suit the intellectual needs of the users. Its applications in library and information fields are becoming popular because of complexities involved in information handling and information processing.

The utilisation of information depends on its provision and accessibility to its uses. Failure to provide information in time may ultimately cause in many aspects. The availability of information at right time and in the

desired form is prime importance in the development of knowledge as well as developmental activities. Access to information has become a fundamental human right. The modern information and communication technology has came to rescue of information users by removing the possible barriers and thus facilitating free communications where in the right information seekers are connected with the right document at the right time in a right personal way. The information centres and information services fields are providing quick and easy access to the information seekers and ensure better and more intensive utilization of the available information.

The basic aims of using information technology are enhancing efficiency, speedy need of information for the needy people, improving reliability and reducing costs. Information technology is useful for new services as it increase the speed of information processing. It is obvious that the application of information technology in information processing and exchanging will prove to be beneficial. It is striking in the case of knowledge acquisition because the impact of intelligently ogranised and delivered information on the life of people is perceptible in the short run, without waiting for a long gestation period. Furthermore it is addressed to meet the vital and urgent problems of the people. It covers and serves a good majority of the total population. Information technology with such tremendous potentiality is sweeping across the globe.

In this modern scientific world, the manual method of information handling and processing have become increasingly inadequate and incapable of providing effective service to the user community. Such an old system of difficult and complicated information processing and acquiring of knowledge is not the right kind of vehicle to channelise the information processing and exchanging. In order to meet these difficulties and problems, the introduction of automation in information management, computerised data base and other advanced useful packages have been introduced all over the world. Advanced countries like USA, UK, Germany, Japan and other developed countries have already been set up various kinds of advanced useful packages to solve these problems.

These factors triggered an awareness among the information professionals and equipping themselves with capable knowledge in their information handlings. The promotion of the concept of global village has dramatically increased the role of information centres and information professionals. Furthermore, the innovation of telecommunication technology has made possible the transmission of information at such a great speed that the universe has been labled as a global village.

The innovation in information technology has brought enormous changes in information processing and exchanging sphere. Today it has become a common place for computer application in information processing

and retrieval. The information technological innovation like networking, internet, e-mail service etc., have made information accessible to the user community world over promoting the concept of a 'global village'. The application of computers to information storage and retrieval has brought new possibilities of automatic information processing. The development of digital representation of information in the computer is an effective method for information handling.

The application of computers in information services has brought new possibilities of automatic information processing. It is one of the most revolutionary and powerful tools ever developed because of the tremendous changes it has made the development of digital representation of information has the computer is an effective for information handling.

Computers perform complex and repetitive procedures in quick, precise and reliable manner. Modern computers are electronic and digital. A computer is an electronic device that executes the instructions in a program. Computer usually performs the following functions.

- It accepts data through the input
- It produces output through output.
- It produces output through output.
- It stores results in the storage.
- It responds to specific set of instructions in a well defined manner.

- It executes a pre-recorded list of instructions that is a program.
- It store and retrieves large amounts of data in a quick manner.

Internet is perhaps the most important development in the field of information technology. It is an electronic infrastructure which opens a way to have intense communication between colleagues, competitors and many disciplines. The internet community bound together by a frame work of computer communications, networking protocols and infrastructure. Internet is often referred to as the net work of networks spread world wide. It is referred to as the information super highway. Cyberspace, the global information infrastructure etc. It is an open non-proprietary, computer communication infrastructure of the world.

The internet offers possibilities for interaction not available through any other technology. It has no definite boundaries; its limitation imposed only available software and hardware technology. The users exchange all kinds of information in innumerable social context on the internet. User applications on internet cover a whole gamut of variety of subject fields and areas-advertising, business, commerce, culture, education, finance, research, recreation, science and technology and so on. It is a resource of many varieties of information. It is a set bed for electronic publishing publicity and marketing of products and services, and integrated access to local and external information. It contains not only has documents but also pictures, sounds and

movies. It introduces multimedia to the www. On the internet one can communicate with around 50 million users world wide a population which is doubling each year.

Tough its tools and services internet rally makes easy to access the global information at a high speed, crossing the barriers to communication. Through internet one can access information available in everywhere. The internet users can send E-mail to various places, access remote services and download data and software from remote hosts. Theory if one can also have access to electronic, journals, bibliographic and full-text resources and to answer the referenced questions, users on this global network can exchange electronic mail with one another, with message delivered instaneously in many cases or in a few seconds or minutes.

It is difficult to explain the exact starting point of internet, probably the idea of internet was originated in 1960 based on the concept of pocket switched net works. In year 1969 the Department of Defence, through their Advanced Research Agency (ARDA) created pocket switched net work over the telephone lines. Out of this initial development ARPA Net was born. This allows users at various sites communicate to other through the E-mail many private networks were connected to ARPA net.

In the 1980's networking connected to the ARPA net continued to grow. In 1982, ARPA net jointed with MIL net (The Military Net work) and

the few other networks. After that the globalisation of internet took tremendous speed crossing the geographical boundaries.

Technologies for accessing information sources on internet are changing rapidly. The growth of internet has been global and continuous, it is growing at a rapid pace. In 1991 the internet was in the reach of only 73 countries, 100 countries access it is 1993 and in 1995 it reached 148 countries. In 1994 it had a user base 20 - 25 millions with over two million connections which was expected to be doubled by the end of 1995. The number of host computers/sites and the number of users are almost doubling every year.

Various kinds of internet communication facilities are the following.

- **E-mail.**

E-mail allows user to send message to others. It works very much like regular postal mail. Every years user on the net work has a private mail box. One's mail is received, it will be kept on one's file, until one's has decided to discard it. Each user must know the E-mail address to send a message. If a message is not delivered, it will make every attempt to return to the sender. It is also useful to transfer documents, obtain electronic copies of books, subscribe to news services or to journals. It is a primacy communication tool in the internet.

- **USER NET News- Group**

It is often referred to as new groups. There are thousands of news groups based on the topics. Subscription to news group it to be done as follows:

- Find out which news group is available through one's system.
- Determine the name of the news group, make sure the spelling entered is correct.
- Add the news group to the file. It is interactive in the sense a user not only receives the message and but also can make replies.
- **Telenet**

Telenet connects to remote computer location. It offers an easy entry into the world of Gophers and www (word wide web) for those people who many otherwise have access to these tools.

- **Internet Navigation Tools**
- Archie : Archie is a collectin of servers. Each of these servers is responsible for keeping track of file locations in several different anonymous FTP sites.
- Gopher: It was developed at the university of Minnesota and it is a menu driven application. It is a resources that can lead one to an answer and

possible answer to question any person posted. Taken together the collection of local and remote resources is called GOPHER. The outstanding feature of it is that different Gopher servers can communicate with each other providing information as necessary in order to answer to one's question.

- WAIS (Wide Area Information System) : It is implemented under client/server model. The server contains indexes to databases of articles, journals resources and other information in other databases elsewhere in the internet. These information are indexed. WAIS will have behave like a reference librarian. It we provide a topic, WAIS will tell we where to find information on the topic. There are WAIS databases in many locations across the internet. Each of these databases is indexed. WAIS will consult these indexes to satisfy our search requests.

- World wide Web (www): Popular www is a MOSAIC, a programme developed by the national centre for super computing application at the University of Illinois. This program bring the web in the fore-front of internet tools. The web actually born b y the late 1991, and by 1993 the web began to really take off, with the development of two slick browsers.

(a) MOSAIC : a graphical multimedia browser and (b) Lynx , a good text based. Both help in navgiatory across many different types of information, text, pictures, sounds and movies.

- Veronica : It is an acronym of "Very Early Rodent oriented netwide index to Computer Archives." It is a search tool that allows quickly to scan Gopher space for particular file and directions. It is basically an extension of Gopher and developed folles at the University of Navada.

- VSNL: Internet access through VSNL (Videsh Sanctur Nigam Ltx (VSNL) is a government of India enterprises is acting as a gateway to internet since 1995. It has drawn a workable plan to provide full range of internet services on all India basis. It has connected its main internet mode at Mumbai to internet node at USA. Via satellite media and internet mode at Europe via submarine capable media providing diversity and highly reliable network connectivity. VSNL has already commissioned remote internet access nodes at Pune, Calcutta, New Delhi, Chennai, Bangalore and Mumbai through DART providing inter-city line. The subscription rate through internet is fluctuating year after year. Now vSNL is known as in the name of BSNL.

It is no doubt that, internet has brought a tremendous change in the field of information transfer more effectively. Technology refers to the use of computer and communication technology for gathering, processing, storage, retrieved and dissemination of information. There have been tremendous development in the area of transmission of speeds at which the information/data files are transmitted over the internet. Inter based resources

and services are very valuable, particularly for the developing countries since the printed sources of information are not easily available in the time from the developed countries. Internet services and access to it should be fully exploited to integrate the network based resources and services by the Indian users community. The internet and world wide web (www) technologies are providing the technological environment and intellectual impetus for the development of digital libraries - libraries without walls, with container less data and ideas.

Appropriate use of information technology by information professionals with clear understanding of potential of information technology is necessary. It is useful for new services as it increases the speed of retrieval by overcoming distance barriers. In the present day context the information technology has ever increasing impact on information processing and exchanging. The main impact of the information and communication technology in the field of knowledge acquisition and communication process are the following.

- Increase of collection, storage and transmission of information.
- The availability of information in machine readable form and multi use of machine readable records by many users for any number of times.

- Information professionals will be free from routine jobs like acquisition, classification, cataloguing, circulation control which can be done through information and communication technology.
- Information centre's files will be searched electronicially and paperless society is visualised.
- Machine, readable sources will increase.
- Better information services from CD-ROM databases can be provided.
- Information technology with remote browsing facilities and full text data base provide ample scope for browsing by information users.

In the present day world context, there is an ever increasing technological innovation progress in information and communication technology. It is the fastest growing technology. This new technological innovation will continue at a super exponential growth rate. This has been true for more than one hundred years and over many generations of computing technologies. Due to rapid technological changes that are continually taking place, it is a constant challenge in this discipline to stay abreast of the far-reaching effects of this world expansion and to be able to develop and deliver more innovative methodologies and techniques utilizing new technological innovation. The progress has come about through improvements of existing technologies as well as the discovery of new way of doing things. It is obvious that the use of information and communication

technology in the acquisition of knowledge and communication will prove to be beneficial. The basic aim of using information and communication technology is enhancing efficiency, reliability and the speedy need of information for the user community. This purpose can be provided through information and communication technology very efficiently and effectively. Therefore, it has an ever increasing and everlasting impact in information accessing and communication process during the period of globalization.

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CHAPTER 6

THE VITAL AND DYNAMIC ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR THE COMPREHENSIVE GROWTH AND DEVELOPMENT OF A NATION IN A GLOBALIZED INFORMATION EXPLOSION AGE

The new information and communication technology is influencing every segment of our daily life. This trend will increase more and more and anybody can dare to deny it. In this information age, the information technology has many more wonders in its store to unraval for the human progress in every field of human life.

Information and communication technology has brought enormous changes and radical transformation in the functioning and management of modern societies. It has given birth to many exciting possibilities and opportunities to modern society. It is the fastest growing technology during the globalization period. Progress in information and communication technology continues at a super-exponential growth rate. The progress has come about through improvements of existing technologies as well as the discovery of new ways of doing things.

Information and communication technology has progressively assumed increasing significance in our society. In fact, the future belongs to

information and communication technology. The whole ediface of our modern civilization depends on proper and effective use of information and communication technology. Technology has already shrunk the world into a global village and every part of human activity including education, agriculture, health, industry, human development etc., are greatly affected by information technology. Information scientists and information experts are the gatekeepers and information handlers shall be the key players in the future.

1. Information Technology is the forerunner of the Information age and Information Society

The use of Information technology provides easy access to a wide spectrum of information through computers, networking, CD-ROMS and internet. As a result of increasing advances of information technology and communication technologies. The so called information age and Information Society' has dawned and the paperless information centres and libraries are fast coming into existence, radically changing the traditional concept.

The world has become a global village. In this modern scientific world, the traditional handling of information all the more has become difficult and complicate. This complicated and difficult old system is not the right kind way to channelise the information. In order to get rid of these problems and difficulties, computerised database and other advanced useful

packages have already been set up in advanced countries like - USA, UK, Germany, Japan and the developed countries. These innovative computrised software packages are helping the modern information handlers in processing and distributing the information and extending the scope of sophisticated kinds of information technologies. Though many sophisticated technological development occuring in information resources and services, adoption of suitable technology is the primary concerns.

Tremendous flow of information is emerging in all fields through out of the world. As such it has become very difficult to manage the information manually. The problem of providing information in time is not due to lack of information, but the way which it is handled to enable the user to fulfil his needs. The traditional way of information handling methods have become almost ineffective in providing the specific of an individual's interest. To overcome this problem, the libraries, information and documentation centres (LIBIDOC) aught to change their attitude towards information handling and management. The user community is also expected to change their methodology attitude and approach to information searching. Information technology applicants based information handling is a viable solution in this direction.

Change is inevitable for any institution and the information centres and information handling of are no exception. Change can be social, political or

economical. It can be caused due to internal forces of external forces. What ever the causes, the institution should have an awareness effective management to adopt and plan for the change. The change occurred in the field of information management has resulted from a convergence of computing technology and communication technology. This means it is essentially the result of advances in the three important areas of computing, telecommunication and micro electronics. Hence, sharing and retrieving of vocal, pictorial, textual and numerical information by a micro electronics based combination of computing and telecommunications.

With the advent of modern technology and their applications, the manual routines have turned to be machine oriented. Due to this change, application of information technology at varying levels of computing - each intended for in some specific area of at work. They are the following:

- Computer.
- Telecommunication (Telephone, Telex, E-mail etc)
- Satellite communication
- Mass storage media
- On-line retrieval
- Reprographics
- Micrographics
- Laser printing

- CD-ROM
- Interfaced technologies
- Video-cassettes
- Video-text
- Computer aided design
- Computer assisted manufacture

The application of modern technology facilitates easy and instantaneous access to global in formation. Developments in computer and communication technology have brought a new dimension to the program of information handling. The focus of the information technology has been on the speed efficiency, economy and accuracy in processing of information. The basic concept of information technology is to make the librarians, information scientists, documentalist etc., free from the traditional routine jobs. The aims of using information technologies are enhancing efficiency, improving reliability and reducing costs. The introduction of microprocessor and mini computer has made these things much easier. Due to increase in information technology development of our work is becoming easier in dissemination of information. All these developments facilitate better and quicker services to the users.

In the domain of information accessing and communication process the information and communication technology has an increasing impact during

this globalization period. Now it has become the fastest growing technology. It can provide quick and easy access of information to the user community and ensure better and more intensive utilization of information. As this increasing advancement of information and communication technologies, the present society became an information society and the globalized age changed as an information age. This is a radical and a revolution social change. This change has given due to the vital and dynamic role and influence of the information and communication technologies. This contribution is a great achievement to the modern changing society. Thus information and communication technology is becoming the forerunner of the information age and information society. This technological development is an inevitable factor and more acceptable for the future information age and information society.

2. Essential Requisites for the Effective Functioning of Information Technology in an Information Age

To provide pinpointed, expeditious and exhaustive information at the right time to the right person, it is very essential to use modern technologies. It provides opportunities for information centres to widen the scope of their activities and increase their significance within the organisation they serve. In the present day context, to provide information at the rime to the right person,

modern information and communication technology is a very essential factor in an information explosion age because of the following reasons.

- Information explosion
- Availability of the information in machine readable form
- Multi-use of machine readable records
- Need to provide better service on wider scale by adopting on-line storage and retrieval techniques.
- Facilitate the storage, retrieval, dissemination and access of information much faster.
- A machine - readable bibliographic data can be used by many uses for any number of times for various purpose.
- Information technology offers a new dimension to share resources among the libraries by creating library net-works.
- With the support of information technology a user doesn't need to visit a complexity machanised library that is "paperless library". The user can access information required on th T.V. Screen in uses libratory, office, house of any place if the user has the necessary telecommunication and other facilities.
- Space problem can be solved by using microform facilities.

The winds of information technology is blowing and making some changes in the existing services of social needs, we are witnessing

revolutionary developments in information and communication technology. This technological development is an inevitable factor and more acceptance for the future society. It is useful for information handling and processing of information. It has an everlasting impact on the field of knowledge acquisition and information exchange which has been dealt elsewhere. Today it has surpassed all other technologies and it is paling a crucial role in the economic industrial, social, scientific and technological development of any country.

The world has now become a global village. During this globalization age, information technology will undoubtedly play a growing role in the information processing and exchanging. It connects to the world at large in many ways, and characteristics of the technology have implications for everyday issues. An equally important motivation for learning information technology concepts in that way provide fundamental knowledge to be used when acquiring applying the intellectual capabilities. It is clear that the applications of information technology in information processing and information exchanging will prove to be an essential component. Its applications in information fields are becoming popular because of complexities involved in information processing and exchanging.

The modern approaches of information are making some changes in the existing services of information handling and exchanging. Appropriate use

of information technology by information centres with clear understanding of potential of information technology is necessary in this technological age. As a result of increasing advances of information technologies in the operation of information services, the so-called information age has dawned and the paperless society is fast coming into existence, radically changing the conventional and traditional concept. In view of the adoption of information technology the following view points are suggested.

- It is essential for us to have information technology to handle information most effectively and efficiently. For this, it is suggested that periodical training course should be conducted from time to time for information professionals and personnels at local, regional and national levels in the use of modern information technologies - U.G.C. should come forward to provide necessary funds, for this purpose and university library and information science departments initiate to conduct such intensive courses.

- The information science professionals and personnels should be ready to recognise and accept the new changes and give more emphasis on modern technology and new skills.

- Efforts should be made to impress upon the higher authorities about the information technologies.

- While introducing the new changes and skills the factors like cost, convenience, comprehensiveness and feasibility should be taken into consider.

- National information centres should be created national databases in science and technology activities. It should be kept in on-line computerised formats.

- Motivation of man power to adjust to the changing environments.

- Net working facilities and co-operation with other information centres and databases.

For the effective functioning of information servicing in information centres the above essential requisites are very necessary in respect of information technology.

The present age is an information age. In this information age, information and communication technology surpassed the conventional and traditional way of life. It has given birth a new way of social life. In this way of new social life information technology has a vital role and each of the persons in society depends on this technology. For the smooth functioning of this technology there is a well organised information organisation and information system is an essential requisites and some other requisites are needed.

3. The value and Need of Information and Communication Technology in a Globalized Information Explosion Age

This is the era of information explosion, in which large amount of information is being generated at every moment. Many changes are taking place in the existing services of information centres and libraries. Technical innovation is nothing new to libraries and information centres. From the advent of the typewriter and electric light to the photocopier, online, catalogue, libraries and information centres have adopted the new technology with relatively minor changes in the institution as a whole. The most conspicuous change was brought in by the introduction of computers and adoption of information technology suited to their local environment.

Technology has generated more changes the present day society is called paperless society" where the information technology plays a vital role. So libraries and information centres are requested to produce a right information to the right reader at a right time. Though many sophisticated technological development occur in information resources and services, adoption of suitable technology is the primary concern, our concern here is mainly with developments and advances of information technology and its effects on the acquisition of information.

Librarians or information handlers working in traditional set up are over-burned with the size and complexity of growing collections and related

files. Files and retrieval devices developed over the years in information centres are found inadequate to meet the present information demands of users. So the information handless are badly in need of something which will exchange speed of work, keep the files over uptodate and compact, retrieve information for the increasing number of users instantaneously in a variety of ways and formats.

Due to increase in information technological development, the information service is being easier, it is useful for new services as it increases the speed of retrieval by overcoming at distance barriers. Today, it is beyond the working and ability at any library or information centres to cater and satisfy the information requirements of the users without using modern information technology. To provide speedy information to the needy people, it is essential to use modern information technologies. It provides opportunities for libraries and information centres to widen the scope of their activities and increase their significance within the organisation they serve.

The objectives of information and communication technologies are to be provide better means of transmission of data in the form of written or printed records, electronic audio or video signals by using wires, cables and telecommunication technologies. To realise these objectives, in the present information age the information and communication technology is needed in information services because of the following reasons. The volume of

information being generated around the world is increasing enormously that the information centres simply cannot manage the large amount of information manually. Information centres need to keep abreast of modern information processing technologies and sources of information for effective management of large information. The potent mix of improved digital computers, telecommunications networks, optical storage media falling hardware and software prices enable information centres to gather, process, store, retrieve and disseminate large quantities of information easily, quickly and inexpensively.

The promotion of the concept of global village dramatically increased the role of libraries and information centres. The world of libraries and information centres have witnessed tremendous changes in offering services to their respective clientele. The manual methods of processing of information have become inadequate and incapable of providing efficient service. To get rid of this inadequate and inefficient information services, the modern information and communication technology plays an important role in storage, retrieved and dissemination of information due to developments such as reduction in computing time, economic, storage capacities of files on video discs, capabilities of resource sharing use of TV and readymade information screen, telecommunication and satellite communication facilities etc. The ability to collect store, retrieve and disseminate large amounts of information needs application of new technologies.

The most conspicuous change was brought in by the introduction of computers and adoption of information technology is suited to local environment. All the above factors triggered an awareness the information servicing professionals and equipping themselves with expensive knowledge in information and communication technology. It is very essential to exist for their survival. In this context, it is essential to access the prevailing conditions in libraries and information centres regarding effective handling of information and the impact of automation in the functioning of the information centres. All these factors have contributed to sufficient changes in information centres and their functions.

In this information age, information explosion is increasing day by day, in which large amount of information is being emerged at everywhere and at every moment. The traditional way of information handling is not adequate to solve this problem. To make information servicing easily, quickly, efficiently and inexpensively information and communication technology must be needed. So the need and value of information technology has a great significance in this information age.

4. The main Reasons for the adoption of Information Technology in a Modern changing Society

Information technology with tremendous potentiality is sweeping across the globe. It is the boon of present information age. It gives the

accessibility to information at the finger tip. The advent of digital computer, advancement in the telecommunication and storage and display technologies have opened new possibilities in dealing with problems arising from collecting, organising and disseminating vast amount of information. Telecommunication is the sending of information in any form that is multimedia (eg: voice, text, data and images) from one place to another using electronic or optical media.

Information technology has provided new media, new modes of information storing and communication. All these technological development in information transfer emphasise the fact that universal availability of information is not more an utopian concept. These days with the use of internet facilities we can access quickly the desired information available in any corner of the world. The internet has brought a revolution in the field of information transferring and communication. We can reach the latest information without losing much time through the internet. Moreover we can exchange messages via E-mail. It doesn't take more time to reach its destination. In the present age computers are an indispensable thing to acquire knowledge and communication . Besides saving the time of users we can also give funds after computerisation and internet faculties.

During the last few years, there have been explosive growth in the volume of information leading to the emergence of information explosion

and information society. It is assumed that USA produces only about 25% of total world's information output. Therefore, the total output of the world crosses 4 trillion pages in one year which is growing at rate of 6 to 11% per year over the past decade. As a result of knowledge explosion, users have been confronted with the problems of searching and retrieving the required information in right time. It has been estimated that an average professionals spend 5 to 15% of their time on reading but up to 5% of their time looking for information.

Over the past century or so there has been continuing growth in information leading to over more paper work and the employment of more and more office workers. The storage have become extremely costly, time consuming and labour intensive. Printing itself is one of the costliest options now available for disseminating information.

The information explosion especially during the last few years resulted in making the libraries or information centres provide a master key to their repository of knowledge. To make maximum use of tremendous upserge of knowledge in the service of humanity, librarians and information professionals started mechanising libraries, information centres and research institutions through various gadgets. Information sharing through computer networks and document delivery in the form of electronic media are very helpful to the research scholars and teaching faculties.

The effective utilization of information technology in knowledge acquisition and communication has become an inevitable factor in the era of information explosion and the wide range of new technology. Information storage medium has been drastically changed over the years from storage, that is papyrus, clay tables, leather, paper or plastic to optical media, optical media is widely used for compact storage of information in text, audio, video from and speedy dissemination to around the world.

The promising and diversified possibilities of information technology have reduced the space and time between people, country, continent and ultimately have led to the emerging concept of 'global society' and 'global village'. Today no any field is untouched by information technology especially by the computer. It is claimed that computers can serve as a panacea for all existing ill of offices and libraries or information centres, since these ca n be made use for performing efficiently all sorts of jobs, from the procurement of the reading materials to their organisation and use.

The main reason for the adoption of information technology is information explosion. The thirst of knowledge is increasing everyday at various levels and on various subject. We are experiencing now what may be termed as the push of technology and its impact on every aspects of information handling. In this information explosion age no any field of human activity is untouched by information technology. Availability of information

in machine readable records form and much use of machine readable records by many users for any number of times. Hence automation is very much needed in information servicing for the following reasons.

- To provide efficient and accurate service.
- To control the rapid growth of information explosion
- Enables new services
- Facilitates co-operation
- Accommodates increased work load

The new information and communication technology has given birth to many exciting possibilities and opportunities to the modern changing society. It has brought revolutionary and radical transformation in the functioning and management of modern changing society in a global village. Today it plays a vital role in the advancement of all human activity in a globalized society. Recently it has surpassed all other technology. It is undoubtedly playing a growing role in the quantitative and qualitative growth and development of the modern changing society during the period of globalization. It is playing a crucial role to provide necessary service to economic, industrial, educational, social, scientific and technological development of country.

The world has now become a global village and a global society in this information explosion age. The promising and diversified possibilities of information and communication technology have reduced the space and time

between people, country and continent. In this information age, there is no any field of human activity is untouched by information technology. So the adoption of information technology is an inevitable factor in this information explosion age.

5. Information Technology as a Major Resource for the Comprehensive Growth and Development of a Country in a Scientific and Technological Age

The most powerful tool in the process of the comprehensive growth and development of a country is science and technology. The scientific and technological development is taken place by through new innovation and this new innovation is due to the contribution of conducting research and evolutionary change of knowledge. Knowledge is the vital component for each social change and it is an inevitable factor for the revolutionary social changes. Society is not a static one. It is always changing due to the influence of new innovation in all fields. Information and communication technology is a new and modern innovation due to the scientific and technological revolution. This revolution is a modern social change and it is controlling the society.

The information and communication technology is being mainly now conquered by mobile phone and internet. Quick and effective communication is possible through these new technology. All the developed countries and

even under developed countries and even under developed countries are presently depending on information and communication technology for the quick and effective communication. Recently, it has become an unavoidable factor in global aspect eventhough it has an increasing level of demerits rather than merits. Presently information technology has surprassed all other technology. Today it is playing a vital and dynamic role in the economic, political, social, cultural, industrial, scientific and technological development of county. Recently it has become a major resource for the qualitative and quantitative growth and development of a modern changing society in a scientific and technological age.

The present day society is becoming paperless society, where the information technology plays a vital role to communicate the information each other. The present age demand is how quickly and effectively information could be communicated to the society. For the quick and efficient information communication traditional method is not suitable. To avoid this inadequate method, the application of modern information and communication technology is very essential. If information and communication technology is not well acquired and applied, then the society becomes handicapped because the socio-economic development of a nation depends upon the availability of adequate infrastructure to access the modern information which is an essential ingredient for day-to-day decision making process.

Information technology has an everlasting impact in the field of developmental activity in a scientific and technological age. It has a tremendous impact on all sectors of human activities. It has brought enormous changes and radical transformation in the functioning and management of human progress and development. Growth and development of information and communication technology is playing a vital and dynamic role in the advancement of human society. Presently we are witnessing revolutionary development in information and communication technology. In the information technology sphere we are noticing revolutions than evolutions. Really the revolutions come after evolutions. In this scientific and technological age information and communication technology is the fastest growing technology than any other technology.

The present age is an information age and tremendous flow of information emerging in all fields through out the world. Development in information science coupled with information technology are the means to meet the ever increasing information demand of the modern society. The modern changing society moves into paperless society. This paperless society transcends all political, social and economical boundary existing in the world. Political, social and economic factors play an important role in changing the scope of information services. These have led to the divergent development of international, national and local spheres. The idea of increasing the effectiveness of information exchange by sharing the work nationally and

internationally is fully recognized by the information professionals, information seekers and information producers.

To attain national development we have to attain universal literacy, good education and excellence in a global standards among a large proportion of the population. Education system has experienced tremendous changes over the past few years. The knowledge explosion, technological explosion and diverse needs of people placed demand for new form of education. This explosive effort on the part of education and excellence in the professional course realised the problem of how do we tackle so many numbers. Technology has been incorporated in the educational system for transmitting knowledge to then wide population overcoming the barriers of distance, age, sex etc. It is here that the information ad communication technologies come into aid and promote the efforts required for spread of education and for the attainment of excellence in teaching and learning upto global standards. New tools and instruments are being designed and marketed in the field communication and mass media. Besides audio-visual aids of other generation, telecommunication, computers and information technology have profoundly changed the scenario of social life.

Presently we are witnessing revolutionary developments in information and communication technology. No wonder we are flooded by information technology relating to all domain of human life. Information technology with

such tremendous potentiality is sweeping across the globe. Technology may be defined as the use of available knowledge and techniques to produce goods and services. It is dominating each sphere of social life. We are experiencing now what may be termed as the push of technology and it impacts every sector of human activities.

During the globalised age we are witnessing rapid development in all sectors of human life. Growth and development of information technology mainly emerged after world war II and since then playing a vital and dynamic role in the advancement of society. The information technology industry particularly in the field of communications, has experienced rapid technological changes in the recent years and further breakthroughs with far-reaching effects are envisaged. Information technology provides for the creation of new job enrichment technology is an important part of the transformation process which converts inputs such as financial, human resources and information resources into outputs in the form of goods and services. Modern information technologies have had-reaching effects upon working environments and work processes. The rapid growth of computers, networks and prolifications of electronic information explosion of vast proportions.

Information technology change has brought a revolutionary change in faster information accessing and communication across the world. The

major civilised revolutions which profoundly effected man's life and living are agriculture and industrial. Third one beginning right now is the information technology revolution and this will have even greater impact than the previous two.

With the advent of information technology revolution and information society, in the present era, information, and indicator of wealth or power has become a vital and dynamic resource for the socio-economic development of a nation. The nation's growth and development greatly depends up on the timely acquisition, processing and transmission of information. Information has now become highly a tradable commodity enhanced by its easy access and use via information and communication technology.

Information technology medium helps to bring about remarkable change and development in the life of people. When we apply the intelligent and appropriate application of information and communication technology in development of programmes, it covers and serves a good majority of the people. The volume of information being generated around the world is increasing enormously that the information centres simply cannot manage the large amount of information manually. With the use of information technology, information centres need to keep abreast of modern information processing technologies and sources of information for effective management of large information. The potent mix of improved digital computers,

telecommunications networks, optical storage media, falling hardware and software prices enable information centres together, process, store, retrieve and disseminate huge qualities of information easily, quickly and inexpensively, we have opportunity to provide life long learning to the people through the employment of information technology media. It is needful to add that education will have a chain effect and consequence on all other realms of socio-economic, political, scientific and technical aspects of life and activity. Information on vital and survival needs of the community like health, nutrition, sanitation, housing, population growth, environmental degradation etc., could be encoded on discs and made available to the people. Information format and languages should be simple and clear such information will be a major force in the domain of society to promote social change and development. In this connection, it is gratifying to recall on observations that "The conviction is that when people know the facts, they remove apt to make a better life for themselves and be easier to live with than when they don't"

('Bloss, Meredith, "Responding to manifes Needa" Library Journal Vol - 89, No. 15 (September, 1964) p - 3252).

It is obvious that the use of information technology in information processing and transferring will prove to be beneficial. The impact of intelligently organised and delivered information technology on the life of people in perceptible in the short run, without waiting for a long gestation

period. Further more, it is addressed to meet the vital and urgent problems of the people. It covers and serves a good majority of the total population.

The application of technology in various sectors like the industry, agriculture, education, transport, health, cultural life etc., are substantially transformation the character of activities in these sectors. Both the quantity and quality of production or product is improving, and the cost of production process is lowered and innovative productive technologies and products with remarkable utility are generated. This is an immense gain for the mankind. This is what we mean by "information technologies revolution" which is potentially and practically capable of revolutionsing all aspects of human life and social organisation. Information and communication technologies with such tremendous potentiality is sweeping across the world.

Information technology medium helps to bring about remarkable changes and development in the life of people. For the sake of convenience, we will analyse the change that will be generated by the information technology media in some areas for purposes of illustration. This full potentiality of the information and communication technology revolution on human life is beyond our grasp. The new technological innovation progress in information and communication technology will continue at a super-exponential growth rate. This has been true for many years and over many generations. It is obvious that the scope of utilising modern information and

communication technologies in the field of developmental programmes in a modern changing society is vast. The new information and communication technology has become a very powerful tool or basis for power possession of which reveals political, economical and social advantages over other groups. The coming decades will see newer forms and uses of information and communication technologies in all the sectors of human activities.

6. Advantages and Disadvantages of Information and Communication Technology when it applies

Information technology is the synthesis of computer and communication technology. Presently it is playing a predominant role to provide necessary service for the socio-economic political, cultural, scientific and technological development of a country. With the advent of information and communication technology, information is an indicator of wealth or power has become a vital and dynamic resource for the comprehensive growth and development of a nation. The nation's growth and prosperity depends greatly on the timely acquisition of processing and transmission of information. Information has now become highly a tractable commodity enhanced by its easy access and use via information and communication technology. The potent mix of improved digital computers, telecommunication networks, optical storage media, falling hardware and software prices etc., enable information centres together process, store,

retrieve and disseminate huge quantities of information easily, quickly and inexpensively.

Information and communication technology has a vital and dynamic role in information accessing and communication in a post-modern age. The most important advantage or merit of this technology is quick and effective communication. This is not possible through the traditional method. This is the most important outcome of this technology. The traditional method is wiped out by this new and modern method. Now people are mostly depending only this method for their information accessing and communication processing. They are not ready to seek the former methods, such as reading book, newspapers, magazines and hearing the radio etc. Presently we don't search anywhere to any kind of information. Simply approach the internet and find out the necessary information.

The advent of the digital computer the advancement in the telecommunications and storage and display technologies have opened up new possibilities in dealing with problems arising from collecting, organising and disseminating a vast amount of information. So the users can get every kind of information very easily. Thus the new information and communication technology has given birth to many exciting possibilities and opportunities for the users community. The dawn of information and communication technology revolution is considered to be one of the marvels

of this century. No wonder we are flooded by in information and communication technology relating to all domains of life. The developments in information and communication technologies are the scientific gifts which serve to overcome the existing problems in the information world. Perhaps, there may not be any area of operation or service where we cannot apply information technology and get benefits in the following ways.

- Information and communication technology helps to avoid duplication of effort and work in library and information centres operations.
- Information technology facilitates co-operation and resource sharing through information centres net works.
- Information technology helps to introduce new services and improve existing services.
- Information technology allows of integration of various library and information centres operations.
- Information technology avoids repetitive nature of work.
- Information technology facilitates faster information communication.
- Information technology helps to increase the quality and range of service.
- Information technology increases morale and motivation of office staff.
- Information technology facilitates easy and wider access to all kinds of information sources.

- Information technology helps to increase efficiency and effectiveness in knowledge accumulation and communication process.
- Information technology ultimately helps to save time, space, energy and resources.
- Information technology helps to improve productivity and image of the information centres and the library.

Information technology medium helps to bring about remarkable change and development in the life of the people. The application of technology in various sectors like the industry, agriculture, education, transport, health, cultural life etc., are substantially transforming the character of activities in these sectors. Both the quantity and quality of production or product is improving, and the cost of process is lowered. Innovative productive technologies products with remarkable utility are generated. This is an immense gain for mankind. This is what we mean by information technology revolution, which is potentially and practically capable of revolutionising all aspects of human life and organisation.

It is obvious that the application of information and communication technology in various sectors in a country will prove to be beneficial. A wide variety of merits or advantage can be derived by the appropriate use of information technology. Information advantage can refer to anything useful produced with the assistance of technology which allows to complete more

tasks with greater accuracy and better quality is less time and for lower costs. It could be higher productivity, better quality or it might be less tangible like ensuring users to have a better image of the information centres and libraries, improved response time or improving staff morale and motivation. In certain nature of jobs, hours of manual work is possible for the completion within minutes through information technology. The effective and efficient implementation of information and communication technology in various sectors of a country helps in performing the operations and services most efficiently and it helps to bring about remarkable social change and development in all social sectors of human life.

Limitations of Information and communication technology

The general notion of complexity growth rates scale, tractability, decidability and explosion of information combine to express some of the demerits or limitations of information technology. Technology systems possess no intuition, creativity, imagination or magic. Though extraordinary in their scope and application, information technology systems cannot do anything. The programs that run on information technologies are designed by human beings. They reflect the assumptions that their designers build into them, assumptions that may be inappropriate or wrong. Unforeseen benefits or drawbacks may result when technology deployed one purpose is used for other purpose. In other cases unexpected side effect may occur because a

technological system is deployed on a much larger scale than originally expected. Technological system may be designed for particular intensity of usage, but may display unexpected behaviour or may result in unexpected consequences when the actual intensity of usage in higher level.

Even when a technological system works as intended to solve a problem as it was originally started, its use may still have unexpected consequences, because the system is embodded in a larger and social and technological context that may not have been properly anticipated. In some instances, these unexpected consequences many even overshaded the intended outcome (ie., solving of original problem). Users should understand that such consequences are not uncommon and work to mitigate or exploit them as appropriate.

Remedies and solution of the problem

Each technology has its own valuable merits or advantages and dangerous demerits or disadvantages. Information and communication technology is not exemption from this and it has also these positively and negative characteristics. The positive elements impact society positive and the negative elements negatively. Presently this technology is conquered by mobile phone and internet. It has influenced in different sector of our social life. In this information explosion age, our social life cannot move forward smoothly without the aid of this technology. There are many fields of life

which the society gets the merits of this technology. Presently it is playing a predominant role in the advancement of society. During this globalization period most of the people are depending on these equipments for their divergent purposes. By the increasing use of this equipments, people are becoming the addict of this worthwhile technologies. Longterm habits has a tendency to make addict to anything. Now it has become an addict and this technology became an unavoidable societal needs like air, water, food and shelter etc.

Information and communication technology is an enabling technology which can contribute to the economic growth and development by reducing costs, improving or extending services, strengthening competitive advances and so on. Considerable advances have been taken place in the field of information technology in every walk of our social life. Recently it has become an unavoidable component in global aspect eventhough it has an increasing level of demereism rather than merits. But the inappropriate misusing of this technology is recently increased very much. People have a tendency to misuse anything for their bad purpose and narrow interest. In the field of information and communication technology people have also the misusing tendency for their bad purpose. The increasing misuse of anything affect society negatively.

Most of the people are misusing this worthwhile technology for their intended bad purposes. These inadequate negative aspects affect society negatively and it will very harmful to the present social order and social life. It will decay the accumulated values and norms of the society which has been given from generation to generation and the present generation will be a degenerated generation. This is the main demerits or disadvantage of this technology when it applies for the bad purpose and narrow interests. To prevent and control the misusing use of this technology, each nation should be taken necessary regulations and restrictions. Don't allow to misuse this worthwhile technology through strict rules and regulations. Otherwise the present generation will become a degenerated generations and it will very harmful to the social order and social life. This is the effective remedies and solution of the problem. So the necessary action should be taken. Otherwise the misusing tendency will be increased.

The functioning of this worthwhile technology cannot be prevented because it is a necessary useful thing to the society in this modern scientific and technological era during the period of globalization. Without the help of this technology the modern social life cannot function properly. In this information age it functions for the modern social life as like the haemoglobin in the blood. It is never a neglatable thing. The effective and appropriate uses of this technology helps in performing the operations and service most effectively for the users community. Tangible connection

should be made to the applications such as information programming, information processing and information transferring etc. Accessing what kind of information and communication technology should be applied - is essential today's information age and how it should be applied for the more benefit of the modern changing society in this globalised age.

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CONCLUSION

Information and communication technology is a modern technology which has been influencing in different sectors of our social life. It has many wonders in its store to unravel for the human progress in every field of our social life. In this modern scientific and technological information age our social life is being impacted by this new technology. All sphere of our social life is controlled and influenced by it. Without the impact and influence of this technology, our social life cannot move forward smoothly in this information age The concept of information technology is the use of process, especially computers and telecommunications for storing, retrieving and disseminating information of all kinds. It is used for collection, storing, processing, retrieving and communicating information. Information on any subjects and management techniques are used in handling information processing is through electronic media is called information and communication technology (ICT). Computers and mobile phones are the most commonly used communication devices and the most important product of information and communication technology. Information and communication technology is meant to the use or application of various technologies in the domain of information fields which make possible new systems and to help people at work in educational and many other institutions and at home.

The winds of information and communication technology is blowing everywhere and making some radical changes in the existing conditions of knowledge or information and the existing services of information and communication process all over the world during this globalized information age. This revolutionary technological changes have given birth to many existing possibilities and opportunities to the modern information society. This radical development is an essential factor and more acceptable for the coming information age and information society. Today it has surpassed all other technology and it is playing a crucial role in the economic, social, political, cultural, industrial, scientific and technological development of the country. It could be effected society, organisation and people in many ways other than making jobs more interesting improving productivity etc. It has profoundly changed information fields operations, information services activities, staff skills requirements and expectations of the users. Developments in information science coupled with information and communication technology are the means to meet the ever increasing information demand of the modern changing society. The present day society is becoming as paperless society where the information and communication technology plays a vital and dynamic role to provide effective information and communication to the user community. Information and communication technology can be provided this very effectively, the conventional or former method cannot fulfill this need demand of the modern paperless society. This

new technology can be provided the pinpointed, expeditious and exhaustive information at the right time to the right person.

The new innovations in information and communication technology has brought enormous changes in information and communication spheres. Today it has become a common place for computer application information processing and retrieval. The information and communication technological innovations like networking, internet, e-mail service etc., have made information accessible very easier and effective to the user community world over promoting the concept of global village. The application of computer to information storage and retrieval has brought new possibilities of automatic information processing. The development of digital representation of information has the computer is an effective method for information handling. It is considered one of the most revolutionary and powerful tools ever developed because of the tremendous changes it has made.

The basic aim of using information and communication technology is enhancing efficiency, improving reliability and reducing costs, to provide speedy need of the information for the needy people, to provide better means of transmission of data or information in the form of written or printed records, electronic audio or video signals by using wires, cables and telecommunications technologies. To realize these objectives, the appropriate application of information and communication technology has a vital and

dynamic role. It is obvious that the application of information and communication technology will be beneficial. It is the great enabler and it provides for those who have access to it, an extension of their powers of perception, comprehension, analysis, thought concentration and articulation, music, physical movement, sensing the environment, simulation and communication. Information technology in all of its various forms offers us tools to access, manipulate, transform evaluate, use and present information, with the assistance of this modern technology which allows to complete more tasks with greater accuracy and better quality in less time and for lower costs. It provides easy access to a wide spectrums of information through computers, networking, CD-ROMS and internet. It is striking in the case of the impact of intelligently oganised and delivered information on the life of the people perceptible at present. It covers and serves a good majority of the total population. Information technology with tremendous potentiality is sweeping across the world.

The modern information and communication technology has come to rescue of information users community by removing the barriers and thus facilitating free communication where in the right document seekers are connected with in the right document at the right time in a right personal way. The information centres and services fields are providing quick and easy access to the information for users community and ensure better and more intensive utilization of the available information. In this present information

explosion age, the value and need of information has increased largely and information technology is highly need for information handling and information processing. It has become the fastest growing technology than any other technology during this globalized information age. Its application in information fields and information servicing sectors are becoming more popular because of complexities involved in information handling and information processing in old method or traditional method of information handling and servicing. By the appropriate use of this technology, the complexities and difficulties involved in the manual method of information processing and servicing can be reduced. A wide variety of advantage can be derived by the appropriate use of information technology. In certain nature of jobs, hours of manual work is possible for completion within minutes.

World has now become a global village and it connects at the world at large in many ways. Adequate use of information technology with clear understanding of its potentiality is necessary in this information explosion age. As a result of the increasing advancement of information technologies the so called information age and information society has dawned and the paperless society to fast coming into existence. Information technology with tremendous potentiality is sweeping across the world. It is a blessing and boon of the present information society. It gives the accessibility to information at finger tip. The advent of digital computer, advancement in telecommunications, storage and display technologies have opened up new

possibilities in dealing with problems arising from collecting, organising and disseminating vast amount of information. This technology has provided new media, new modes of information storing and communication process. All these technological development in information transfer and communication emphasises the fact that universal availability of information is no more an Utopian concept. These days with the use of internet facilities we can access the desired information available in any corner of the world. The internet has brought a revolutionary change in the information field. We can speedy collect the latest information without losing much time through the internet. Moreover we can exchange message via E-mail. It doesn't take more time to reach its destination. It is no doubt, the internet based resources and services are very valuable, particularly for the developing countries since the printed sources of information are not easily available in the time from the developed countries.

Information technology has progressively assumed increasing significance in our society. Infact the future belongs to information and communication technology. The whole edifice of our modern civilization depends on proper and effective application of information and communication technology. Technology has already transformed the world into a global village and every sector of human activities are greatly effected by this modern technology. The progress in information and communication technology continues at a super exponential growth rate. This progress has

come about through the improvement of existing technologies as well as the discovery of new ways of doing things. This can be possible through conducting of researches and evolutionary change of knowledge. The application of this new technological innovation in various sectors like the industry, agriculture, education, transport, health, cultural life etc., is substantially transforming the activities in these sectors. Both the quantity and quality of the production or product is improving and the cost of production process is lowered. Innovative productive technologies and products with remarkable utility are generated. This is an immense gain for mankind. This is what meant by information technology revolution, which is potentially and practically capable of revolutionising all aspects of human life and organisation.

If information and communication technology is not well acquired and applied then the society becomes handicapped because of the socio-economic development of a nation depends upon the availability of adequate infrastructure to access the modern information which is an essential ingredient for the day-to-day decision making process. Growth and development of this technology is playing a vital and dynamic role in the advancement of human society. The growth and development of our modern civilization depends on proper and effective use of this modern technology. The application of this modern technology facilitates easy and instantaneous access to global information. The focus of this technology has been on the

speed, efficiency, economy and accuracy in processing of information. Information sharing through computer, networks and document delivery in the form of electronic media is very helpful to the research scholars and teaching faculties.

The promising and diversified possibilities of this technology have reduced the space and time between people, country, continent and ultimately have led to the emerging concept of global village and global society. Today any field is untouched by this modern technology especially by the computer. It is claimed that computer can serve as a panacea for all existing ills of offices and libraries and information centres. The main reason for adoption of this technology is information explosion and in this information age any field of human activity is untouched by this modern technology. Availability of information in machine readable records form and much use of machine readable records by many users for any number of times is the peculiar characteristics of this technology.

The most powerful tool in the process of the comprehensive growth and development of a country is science and technology. The growth and prosperity of scientific and technological development greatly depends on the timely acquisition, processing and transmission of information, this can be only possible by the appropriate use of this modern technology. Information

has now become highly a tradable commodity enhanced by its easy access and use via this modern information and communication technology.

Information and communication technology helps to bring remarkable social change and development in the life of people. The intelligently application of this technology in developmental programmes, covers and serves a good majority of the people and it will be a major force in the domain of society to promote social change and development. A wide variety of merits or advantages can be derived by the appropriate use of this technology. It helps to complete more tasks with greater accuracy and better quality in less time and for lower costs. In certain nature of works, hours of manual work is possible for the completion within minutes. It helps to avoid repetitive nature of work and to introduce new services and improve existing services. It increases morale and motivation of office staff and helps to increase the quality and range of services. It facilates easy and wider access to all kinds of information sources and to facilitate faster communication. Ultimately it helps to improve productivity and image of the information processing services. The effective and efficient implementation of this technology in various sections of a country helps in performing the operations and services most efficiently and it helps to bring about remarkable social change and development in all sectors of human life.

Even though a wide range of achievements or advantages can be derived by the appropriate implementation of this technology, yet it has also small range of disadvantages or limitations. The general notion of complexity, growth rates scale, tractability, decidability and explosion of information combine to express some of the demerits or limitations of this technology. Technology systems possess no intuition, creativity, imagination or magic. Though extra ordinary in their scope and application, information and communication technology cannot do anything. The programs that run on this technology is designed by human beings. They reflect the assumptions that their designers build into them the assumptions that may be inappropriate or wrong. Unforseen benefits or drawbacks may result when technology deployed one purpose is used for other purpose. In other cases unexpected side effects may occur because a technological system is deployed on a much larger scale than originally expected. Technological system may be designed for a particular intensity of usage, but may display unexpected behavior or may result in unexpected consequences when the actual intensity of usage in higher level. Even when a technological system works as intended to solve a problem as it was originally started, its use may still have unexpected consequences, because the system is embodded in a larger and, social and technological context that may not have been properly anticipated. In some instances, these unexpected consequences may even overshadow the intended outcome (ie solving of original problem). Users should understand that such

consequences are not uncommon and work to mitigate or exploit them as appropriate.

Each technology has its own valuable achievements or advantages and dangerous disadvantages. This modern technology is not an exemption from it. The positive elements impact society positively and the negative elements negatively. Presently this technology is conquered by mobile phone and internet. It has largely influenced in different sector of our social life and it is playing a predominent role in the advancement of society. By the increasing use of this equipments, people are becoming the addict of this worthwhile technologies. Habits has a tendency to make adict to anything. Now this technology has become an addict of the users community and it has become an unavoidable needs of society like air, water, food and shelter etc. But the inappropriate misusing of this technology is recently increased for the bad purpose and narrow interest. The increasing misuse of anything affect society negatively, misusing of this worthwhile technology affect society negatively and it will very harmful to the present social order and social life. It will decay the accumulated values and norms of the society which has been derived from generation to generation, and the present generation will be a degenerated generation. This is the main demerits or limitation of this worthwhile technology when it applies for the bad purpose and narrow interest.

To prevent the misusing of this technology, each nation should be carefully take necessary action. Don't allow to misuse this worth while technology for the bad purpose and narrow interests. Bringforth strict rules and regulation to prevent the misusing of this technology. Otherwise the misusing tendency will be increased and cannot be prevented it. The functioning of this worthwhile technology cannot be prevented because it has become an unavoidable thing in this globalised information explosion age. Without the help of this technology our social life cannot move forward smoothly. In this globalized information explosion age, it functions as the haemoglobin in our blood. It is not a neglatable thing. The effective and appropriate use of this technology helps in performing the operations and services most effectively for the users community and society. To realize this motto tangible connection should be made to the applications such as information programming, information processing and information transferring etc. Accessing what kind of information and communication technology should be applied an essential factor in today's information age and how it should be applied for the more benefit of the modern changing information society in this globalised age.

Though this the modern information and communication technology has a low level of demerits or disadvantages, it has a wider level of merits or advantages and its impact is influencing all our social sector in this globalized information age. It is obvious that the scope and relevance of utilizing this

modern technology in the field of developmental programme in a modern changing society is vast. This technology has given birth to many exciting possibilities and opportunities to the modern changing information society. It has had tremendous impact on all sectors of human activities. It provides for the creation of new jobs opportunities for some, and retrenchment and fear for others. It has brought enormous changes and radical transformation in the functioning and management of modern changing society. The coming decades will see newer forms and uses of this technology in all sectors of our social life. Perhaps there may not be any area of operation or service where we cannot apply this modern technology. The dawn of this technological innovations is regarded to be one of the marvels of this globalised information age. It is a boon and scientific gift given by the revolutionary scientific and technological innovations which to overcome the existing problems in the information world.

In the preceding chapters attempt has been made to elucidate the impact of information technology in the accumulation of knowledge and communication during the period of globalization. Information and communication technology is a modern technology which has been influencing in different sectors of our social life.

The first chapter is an introduction, it is used to examine the features of knowledge in a globalized information explosion age, the peculiar

characteristics of effective information and communication in an information explosion age. Last part of this chapter discusses about the truth and reality of knowledge of different school of thoughts and thinkers.

The second chapter is an analysis of the origin and development of the nature and problem of knowledge influencing the ontological, epistemological and metaphysical perspectives of different schools of western and Indian philosophical systems. The major factor addressed in this chapter is how knowledge is derived and what are the different modes and methods of enquiry to acquire knowledge in human mind.

The third chapter is a discussion about the relationship between philosophy and education. Knowledge is the central subject matter of both philosophy and education as a way and method to realise and review the knowledge. Philosophy regards how knowledge is possible, the origin and development of knowledge, the nature and problem of knowledge while education concerns how to learn knowledge and what are the different modes and methods of enquiry to acquire it.

The fourth chapter used to discuss the vital and dynamic role of information in communication and the comprehensive growth and development of a country in a globalized information explosion age. Knowledge or information is the result of human thinking and a byproduct of human mind. Information has a significant role in communication and it is an

essential factor for every activities. In this globalized information explosion age. It is considered as a social right of the individual and it is a basic resource for every walk of our social life.

The fifth chapter is devoted to analyse the dominant role and impact of information and communication technology in the accumulation of knowledge and communication during this globalized information explosion age. This chapter shows the development of information and communication technology and its role and impact in the accumulation of knowledge and communication in an information explosion age. In this paperless information age, this modern technology can satisfy the increasing need and demand of the individual to acquire knowledge in the most efficient and effective way.

In the final chapter the effort is made to analyse the role of information and communication technology as a resource for the comprehensive growth and development of a nation in a globalized information age. This modern technology is influencing in every segment of our social life. Presently it has become the most powerful tool in the process of the comprehensive growth and development of a country.

This work grew out of an understanding of the impact of information technology in the accumulation of knowledge and communication during the period of globalization. In a very restricted sense, it is based upon a philosophical analysis influencing the ontological, epistemological and

metaphysical perspectives of both the western and Indian philosophical systems and the conceptual domains of information and communication technology.

Coming to the conclusion it can be said this study tries to find out the contribution and impact of information technology in a critical way. This technology has a slight level of drawbacks when it utilizes for the bad purposes but it has a great level of benefits when it applies for the good. The drawbacks of this technology affects the society negatively in some sense rather than that it affects and the society positively. Generally every technology is a two-edged sword, conveying benefits and drawbacks. Though extra-ordinary in their scope and application, information technology cannot do anything individually because it doesn't possess intuition, creativity, rationality, imagination etc. The programs that run on this technology is designed by human beings. They reflect the assumptions that it may be inappropriate or wrong. This technology has some unforeseen benefits deployed for one purpose is used for other purpose. In other cases unexpected side effect may occur because a technology is deployed on a much larger scale than originally expected. Technological system may be designed for particular intensity of usage, but may display unexpected behavior or may result in unexpected consequences when the actual intensity of usage in higher level. Users should understand that such consequences are not uncommon and work to mitigate or exploit them as appropriate.

Even though a slight level of drawbacks, this technology has a great level of benefits and its impact is influencing all segments of our social life. There are many factors responsible for the structural change of society. Cultural contacts and interaction with cultures, political and social institutions, technological advancement and modernisation, industrialisation and urbanization, rapid communication and transportation, bureaucratization etc are the characteristic features of rapid social changes. In this digital age, information and communication technology has a vital and dynamic role to the societal growth and development of a nation. It is an inevitable factor during this globalized information explosion age. This technology has profoundly changed the information and communication sectors such as services, staff skill requirements and expectations of users. Application of this technology in the information and communication sectors are becoming popular because the difficulties and complexities involved in manual methods which are almost ineffective and inefficient in providing specific information of an individual interest. In this information explosion age, the manual method is not capable for providing effective service to the users. The problem of providing information in time is not due to lack of information, but the way which is handled to fulfill the needs of user's community. Such a complicated and difficult problems can be overcome very easily and effectively by the appropriate application of this modern technology. It

provides pinpointed, expeditious and exhaustive information at the right time to the right person at the finger tip.

In this information explosion age, all of us have become information oriented beings consciously or unconsciously and there is an increasing need to acquire and utilize information in the most efficient and effective way. The demand of this digital age is how to get speedy information retrieval and quick communication. Demand of this digital age can be realised through the information and communication technology in the most efficient and effective way. Recently access to information has become a fundamental right and it is considered as the fifth need of man after air, water, food and shelter. The availability of information in right time and in the desired form is the prime importance in the development of knowledge as well as developmental activities. Failure to provide right information in appropriate time will be ultimately a cause to hinder the growth and development of individuals as well as society.

With the advent of this modern technology the manual routine methods have turned to be machine oriented and it has realized the concept of the speedy need of information for the needy people at their finger tip. This technology facilitates easy and instantaneous access to the global information. With such developmental potentiality in information and communication domains emphasizes the fact that universal availability of information is not

an utopian concept. The exciting possibilities and opportunities of this technology has reduced the space and time between people, country, continent and ultimately have led to the emerging concept of "global village" and "global society".

This enabling technology is one of the most revolutionary and powerful tools ever developed because it has made the development of digital representation of information in the computer. It is obvious that the efficient employment of this modern technology proves to be beneficial and this medium helps to bring about remarkable social change and development. With such tremendous potentiality is sweeping across the world and it can be perceptible in the life of people. This modern technology has a crucial role to provide necessary service to economic, industrial, educational, social, scientific and technological growth and development of a country by reducing costs, improving existing services, strengthening competitive advances and so on. Dawn of this technological innovation is regarded as one of the marvels of this digital age. It is a scientific gift and boon given by the revolutionary scientific and technological innovation which can overcome the existing problems in the information world. The full potentiality of this technological revolution on human life is beyond our grasp and this progress will continue at a super exponential level. This has been true for many years and may generations.

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