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KNOWLEDGE SOCIETY AND DIGITALISATION

UNIT 16

Dimensions of Knowledge Society: Access and Equity Issues

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Democracy and Digital Media

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ICT and Knowledge Society: Challenges & Opportunities



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UNIT 16 DIMENSIONS OF KNOWLEDGE SOCIETY: ACCESS AND EQUITY ISSUES

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16.0 INTRODUCTION

The forces of globalisation redefined the economic, social, political, cultural, etc. arena of contemporary human life. Revolutionising developments in Information Technologies (ITs) which occurred during post World War II or more specifically in 1970s and after words was an integral part of globalisation process that picked up increased momentum during this period. The rapid interaction and interconnectedness between and among societies created by the current phase of globalisation left Information and Communication Technologies (ICTs) to become dominant in every aspect of social system where technologies of information processing and communication became the core of productivity. Initiation in the processes of information handling, transmission, storage and retrieval become the key to human programmes and development and qualitatively different ways of life. In the emerging society — the information/ knowledge society — knowledge and information; and the application of knowledge and information to knowledge generation and information processing/ communication became the basic constituents of human progress. It paved the way for the emergence of a global knowledge economy – a networked society with a varied kind of economic and educational requirements and principles of organising the society, its moral values and identity.

It is restructuring the global social and economic equation — shifting from income divide to knowledge divide. In the developed countries ICTs have been the drivers of knowledge society.

As evident from the above discussion the information age knowledge becomes the basic form of capital, and the economic growth is driven by the accumulation of knowledge. Here the product with high knowledge component generates higher returns and a higher growth potential. In the knowledge economy, as distinct from peasant and industrial economy where economic wealth was produced by using human manual labour and machines respectively, the process of generation, dissemination and exploitation of knowledge produce economic wealth predominantly. Thus in the emerging knowledge society is one in which productivity is based on acquisition or generation, dissemination and application of knowledge or information. The main objective of this unit is to try and know more about knowledge society or information society. We will also try to trace its emergence and list its characteristics here. How and why the generation, dissemination and application of knowledge become integral part of knowledge society and dimensions of work participation in knowledge society also will be analysed in this unit.

16.1 LEARNING OUTCOMES

This unit will enable you to understand and analyse:

- the emergence of knowledge society in the age of ICT;
- the distinctive features of knowledge society, knowledge economy and knowledge workers;
- skill acquisition and knowledge dissemination in knowledge society;
- dimensions of work participation in knowledge economy; and
- the role of knowledge and ICTs in empowering communities.

16.2 TECHNOLOGICAL TRANSFORMATION AND HUMAN PROGRESS

Technological transformation has always played a crucial role in the progression of human societies from one stage to another. This transformation has widely influenced the economic, social, cultural and political institutional arrangements of the society by introducing changes in the nature of work participation in the organisation of production. The transformation of human societies from pre-industrial/agrarian to industrial and then again to post-industrial has widely been shaped by the innovation of new technologies. At the beginning of the 19th century, far-reaching changes in the social and economic lives of mankind were ushered by science, engineering and technology. The changes of that era were marked by the concerted efforts to abolish slavery and large-scale expansion of centralised factory production and the creation of industrial classes — workers and capitalists. This was characterised by production of manufactured goods, and acquisition of new skills required for industrial manufacturing. The latter half of the 20th century witnessed the advent of Information and Communication Technologies (ICTs), which heralds a new phase in the history and the changes brought about by it in the social and economic fabric are effectively

unique. During this period there was a phenomenal expansion of computer communication, electronic technology and service economy (Bell 1976).

Along the time, change has also been marked in the pattern of work participation. In the wake of industrialisation and rapid urbanisation there has been shift in the pattern of work participation from agricultural to non-agricultural economy not only in the developed but also in the developing parts of the world. However this shift has taken a new turn in the wake of the emergence of the postindustrial society whereby work participation increased in the service economy including those in the telecommunications, transport and marketing. It is significant that till the early decades of the last century a large segment of the workers of the industrialised nations like those of France, United Kingdom, America, Belgium, Japan etc. were in agriculture.

Presently though agriculture accommodates substantive proportion of workforce, there has been increasing contribution of service sector to the GDP both in developed and developing countries. The blue-collar worker emerged very fast from the last quarter of the 19th century and then growth become very fast till the second half of the 20th century. Indeed the industrial workers grew phenomenally in the first half of this century in factories, mines, and transportation and by 1950s they emerged to be the actual majority of the working population in the industrialised countries. However in last 40 years they have declined equally rapidly first as proportion of the total and since the early 1980s, even in absolute numbers. The emergence of service sector (we will learn more about this in the later part of this unit) as a potential avenue for employment and earning has paved the way for the emergence of knowledge economy both in developing and developed countries. Agricultural wave, industrial wave and information age are the three stages of economic evolution of humanity according to Alvin Toffler. Presently the human society is undergoing the third wave i.e. the information wave, which is marketed among others by explosive developments in information technologies and predominance of service employment (Toffler 1980).

Box 16.1: Toffler's First, Second and Third Wave

In his book *The Third Wave* Toffler describes three types of societies, based on the concept of 'waves' - each wave pushes the older societies and cultures aside.

- First Wave is the society after agrarian revolution and replaced the first hunter-gatherer cultures.
- The main components of the Second Wave society are nuclear family, factory-type education system and the corporation. Toffler writes: "The Second Wave Society is industrial and based on mass production, mass distribution, mass consumption, mass education, mass media, mass recreation, mass entertainment, and weapons of mass destruction. You combine those things with standardisation, centralisation, concentration, and synchronisation, and you wind up with a style of organisation we call bureaucracy."

- Third Wave is the post-industrial society. Toffler would also add that since late 1950s most countries are moving away from a Second Wave Society into what he would call a Third Wave Society. He coined lots of words to describe it and mentions names invented by other people, like the Information Age.

Source: *The Third Wave 1980*

Check Your Progress: 1

Note: 1) Use the space provided below for your answers.

2) Compare your answers with those given at the end of the Unit

1. Explain Alvin Toffler's three types of societies?

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2. What technological innovations fueled the speed of the information revolution?

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3. List any five features of the knowledge society?

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16.3 THE EMERGENCE OF INFORMATION AND KNOWLEDGE SOCIETY

The roots of information society idea are closely associated with the idea of post-industrialism. Although the scientific and industrial predecessors of electronics based information technologies can be found in late 19th and early 20th centuries, it was during the second World War and its aftermath that the major technological breakthrough in electronics took place: the first programmable computer, the transistor, source of microelectronics — the

true core of Information Technology Revolution (see Box 24.3) (Castells 1996). Manuel Castells contends that the new information technologies, which include microelectronics, computers, and tele-communications diffused widely in 1970s accelerating their synergistic development and converging into a new paradigm (Ibid).

Box 16.2: Tracing Information Technology Revolution

Although the technological inventions such as telephone by Bell in 1876, radio by Marconi in 1898, vacuum tube by De Forest in 1906 were landmark inventions in technological development, major technological brake through leading to a technological revolution in the human history based on electronics based technologies can be said to happened during and after the Second World War. The invention of transistor in 1947 made possible the processing of electronic impulses at a fast pace in binary mode of interruption and amplification, thus enabling the coding of the logic and of communication with and between machines. These processing devices are semiconductors, which are popularly called as chips. A decisive step in microelectronics had taken place with the invention of integrated circuit in 1957. It triggered a technological explosion. The giant leap forward in the diffusion of microelectronics in machine came in 1971 with the invention by an Intel engineer of Silicon valley, Ted Hoff, of microprocessor, that is the computer on a chip. Thus, information processing power could be installed everywhere.

The power of chips is evaluated by a combination of three characteristics: their integration capacity, indicated by the smallest line width in the chip measured in microns (1micron is equal to 1 millionth of an inch); their memory capacity, measured in bits: thousands (k) and millions (megabits); and the speed of the microprocessor measured in megahertz. The technological advancements of the microprocessors were so fast that while the first microprocessor of 1971 laid in lines of about 6.5 microns the microprocessor of 1999 measured 0.25 microns. Greater miniaturisation, further specialisation and the decreasing price of increasingly powerful chips made it possible to place them in every machine in our everyday life.

The advent of microprocessor in 1971, with the capacity to put a computer on a chip, turned the electronics world and indeed the world itself upside down. The microcomputer or personal computer software also emerged in mid 1980s out of the enthusiasam generated by two Harvard drop-outs, Bill Gates and Paul Allen. Having realised its potential they went onto found Microsoft, today's software giant.

Indeed, to advances in microelectronics and software it has to be added major leaps forward in networking capabilities, which was made possible by major developments both in tele-communications and computer networking technologies during 1970s. during this period tele-communications also had been revolutionized by a combination of 'node' technologies (electronic switches and routers) and new linkages (transmission technologies). Major advances in optoelectronics (fibre optics and laser transmission) and digital packet transmission technology dramatically broadened the capacity of

transmission lines. Each leap and bound in specific technological field amplifies the effects of related information technologies.

Source: Castells 1996

Manuel Castells (1996) argues that in the new economy emerged around the world as a result of the current phase of globalisation process, productivity and competitiveness is by and large a function of knowledge generation and information processing or informatisation. In the new information age knowledge became the power and the tool for capital accumulation. According to Yoneji Masuda (1981) in the post-industrial, information-based society, knowledge, or the production of information values, will be the driving force of society, rather than industrial technologies (p. 29). Thus in the evolving information age the generation, dissemination and application of knowledge becomes the basis of all aspects of knowledge and hence it is also called as knowledge society.

Activity - 1

Do you think the contemporary period is witnessing a technological transformation and a consequent social transformation? Why?

16.4 WHAT IS KNOWLEDGE/INFORMATION SOCIETY?

According to Daniel Bell, in information (and knowledge) society science plays an increased role in the productive forces; professional, scientific and technical groups will rise into prominence in addition to the vast expansion of information technology, which include a converging set of technologies in microelectronics, computing (machines and software), telecommunications/broadcasting, and optoelectronics etc. This will be the new axial principle of the economy and society. He forecasts the growth of new social framework based on tele communications which may be decisive for the way knowledge is created and retrieved, and the character of work and occupations people are engaged in. The computer will play a pivotal role. In information society knowledge and information will supplant labour and capital (as in Marxian view) as the central variables of the economy. Here the information will be treated as a commodity and the possession of information will give more power to its owner. There will be more and more penetration of information into more traditional areas of agriculture, manufacturing and services. There will be major social changes resulting from the establishment of new tele-communications infrastructure (Bell 1976). New forms of social interaction based on electronic communications devises are replacing older types of social relations. There is more application of IT to overcome the ecological and environmental problems associated with industrialism as well.

Manual Castells (1996) prefer to call the emerging society as “informational” society where the process of generation and transformation of information generation has rather become the fundamental sources of

productivity and power. To Scott Lash (1999) in the information society the source of power is information. Power in the manufacturing age was attached to property as the mechanical means of production. In the information age it is attached to intellectual property in the form of patent, copyright, and trademark so that they can be valorized to create profit. There is thus commodification of information and no time for reflection. In this society however it is not the commodification that is driving the informationalisation but the informationisation that is driving commodification. In this age inequality is less defined in terms of the relations of production but more by exclusion.

The society that is emerging is a “knowledge society” one which is characterised by “new structures” of knowledge, methods of dissemination and a technology that permits and sustains “unrestricted” access to knowledge and control over it. Thus in the contemporary phase of human society the proliferation of information technology has led to the emergence of a mass society that produces knowledge and information on a mass scale as the driving force of economy (Naisbitt 1986:7). Consequently there has been the rise of the category of knowledge workers, who are fast replacing both histories’ traditional groups and the groups of industrial society; the group, which is fast becoming the center of gravity of the working population. This group is also becoming the single largest group of the work force in the postindustrial society (Drueker 1994).

The social and economic dynamics of the knowledge society are widely shaped by the new forces of production, influence of the global market and the state. To Antony Giddens (2000) globalisation and knowledge economy are the co- constituents of the global information order and that this economy is populated by an active and reflexive citizenry of wired workers, whose knowledge is the principal source of production and they are non-hierarchical in their work environment.

According to Bob Jessop (2003) knowledge can acquire commodity value after entering the labour market and once it is made artificially scarce and its access depends on payment of rent. Knowledge can be transformed into a fictitious commodity by transforming it from a collective resources (intellectual commons) into intellectual property (eg. Patent, copyright etc.) for revenue generation; subsuming of knowledge production under exploitative class relations and by transforming intellectual labour into wage labour for producing knowledge for the market; and bringing intellectual labour under capitalist control through commoditisation and integration into a networked digitized production and a consumption process controlled by the capital. He foresees the possibilities of monopolies in knowledge and information by embedding them in technology, standards or legally entrenching in intellectual property rights.

It is now recognised that in the wake of present phase of globalisation ICTs have paved the way for the emergence of global knowledge society and economy; a networked society with a varied kind of economic and educational requirements and principles of organising the society, its moral, values and identity. In essence the ICTs have been juxtaposed to the process

of restructuring of economic and social institutional arrangements of the knowledge economy of information age locally and globally. ICTs now offer a challenge to the conventional ways of getting information, knowing and disseminating. Thus this cutting edge technology has been linked to the new discourse of development. In this information age knowledge is the basic form of capital and that economic growth is driven by the accumulation of knowledge (cf www.med.gov.nz). There has emerged a symbiotic relationship between knowledge economy and ICTs for releasing the creative potential and knowledge embodied in people and harnessing local-global connectivity, for generation of wealth and to widen the market of this economy (Ibid).

Following are some of the distinctive features of knowledge society:

- The basis of knowledge-based development in the knowledge societies is the generation, dissemination and deployment of knowledge.
- In knowledge society scientific knowledge is considered as an asset and the scientific and technical group will rise into prominence.
- The social network in a knowledge society is based on tele and other communication technologies.
- The creation and retrieval of knowledge plays a decisive role in the organisation of work and occupation. The occupations, which make more and more innovative knowledge, will become predominant in this economy.
- The knowledge/information is treated, as commodity and the possession of knowledge gives more power to the owner.
- In knowledge society inequality is defined in terms of exclusion from knowledge.
- In knowledge society knowledge is transformed from collective recourses (intellectual commons) into intellectual property for revenue generation.
- In knowledge society the conflict is between minority knowledge workers and the majority traditional workers.
- Knowledge society will be far more competitive than the earlier societies, as knowledge will be key competitive factor for career and earning opportunities.
- Knowledge in the knowledge society basically exists in specialised application by specialised experts. The central work force will be the highly specialised people and not the generalists. Here the people who acquire the specialised knowledge will have the ever more scope of mobility. “It demands for the first time in history that people with knowledge take responsibility for making themselves understood by the people who do not have the same knowledge base. It requires that people learn to assimilate into their own work specialised knowledge from other areas and disciplines” (Ibid).

Activity – 2

Some of the features of knowledge society are given in this text. Can you point out some more features.

16.5 KNOWLEDGE ECONOMY AND KNOWLEDGE WORKERS IN A KNOWLEDGE SOCIETY

In knowledge economy economic wealth is predominantly produced by using knowledge. Indeed it is an emerging society whose economic base is widely shaped by the processes of generation, dissemination and exploitation of knowledge. The neo-classical economists have emphasised on labour and capital to be key factors of development. To Paul Romer (1990) knowledge is the third factor of production and long-term growth it is the basic form of capital and that economic growth is driven by its accumulation. Here we may sum up the following features of knowledge economy:

- In knowledge economy knowledge is a public good, as this becomes object of wide use.
- As the knowledge economy is dependent on generation of knowledge for its prosperity here knowledge gained by experience is as important as formal education and training.
- A knowledge economy is to become a learning economy in order to utilize its full capacity and to take its optimum advantage. “Learning means not only using new technologies to access global knowledge, but also to using them to communicate with others about innovation. In the learning economy individuals, firms and countries will be able to create wealth in proportion to their capacity to learn and share innovation (Foray and Lundvall 1996; Lundvall and Johnson 1994). Formal education, too, needs to become less about passing on information and focus more on leading people how to learn (Ibid). Learning thus becomes a lifelong process in knowledge economy.
- According to OECD, ICTs are the facilitators of knowledge creation. In the knowledge economy ICTs are the tools for releasing the creative potential and knowledge embodied in people. Wealth generation is becoming more closely tied to the capacity to add value using ICT products and services.

In the information age individuals are put in the centre of the knowledge and skills based society. More than ever before, individuals want to master their own lives and expect to contribute to economy and society. The development of individuals as active citizens of society is increasingly given a central place in statements of learning, education and training objectives.

The individual is becoming the architect and builder responsible for developing his/her own skills, supported by public and enterprise investment

in lifelong learning. ICTs are empowering the individual from a passive teacher-oriented approach to gaining knowledge; there is a shift towards learning for life and work, centered around the individual. The need to learn how to access, analyse and exploit information and transform it to new knowledge is increasing and in particular the Internet based technologies, offer great opportunities. The empowered individuals or the knowledge workers take charge of all spheres of society.

Knowledge workers of the knowledge society are distinctively different from those of the agrarian and industrial society workers. They are defined as “symbolic analyst” who manipulates symbols rather than machines. They include architects and bank workers, fashion designers and pharmaceutical researchers, teachers and policy analysts. They are associated primarily in service sector such as telecommunications, transport and financial services. Knowledge workers systematically accumulate knowledge, share it and deploy it purposefully. Continuously improving the stock of knowledge will be critical for their success. In the knowledge society the knowledge workers are valued very high. For e.g. In many of the American manufacturing companies the intangible assets are now worth more than tangible assets. These intangible or intellectual assets are based primarily on the skills and capabilities of their so-called knowledge workers.

The distinctive features of the knowledge workers are noted down here.

- The knowledge workers are the leading class of the knowledge society and necessarily the ruling class. They differ fundamentally from the other, groups in history who occupied the leading dominant position in then values, expectations and social position.
- They get access to work and social position in knowledge society through formal education and training.
- Quantity and quality of knowledge work will differ substantially based on the amount and kind of formal knowledge and training required for a particular job.
- As formal education occupies the center stage of the knowledge society, formal schooling emerges to be the key institution. Here the components of knowledge (knowledge mix), quality of learning and teaching not only become central concern of the knowledge society, but also central political issues. “In fact it may not be fanciful to anticipate that the acquisition and distribution of formal knowledge will come to occupy the place in the politics of the knowledge society which acquisition and distribution of property and income have occupied in the age of capitalism”.
- It is significant that not necessarily the conventional system of schooling, but the systematic continuing education offered in the place of employment would get importance. Here an educated person will be someone who has learnt how to learn and throughout her/his lifetime, continues to learn especially in and out of formal education. Thus acquisition of knowledge is not age specific but lifelong.

- The knowledge workers work in terms and work as employee in an organisation. They are to learn different kinds of terms for different purposes – their performance capacities, strengths, limitations and trade-offs between various kinds of terms. They are also to learn how to switch from kind of team to another and to integrate oneself into a team.
- Organisations in general provide the platform to the knowledge workers to convert their specialised knowledge into performance. In the organisation the knowledge workers are at times the employee and at time the bosses.
- The knowledge workers also own the tools of production. Unlike the capitalist society, true investment in the knowledge society is the knowledge of the knowledge workers, without knowledge whole production process is unproductive. It is the knowledge investment that determines whether the employee is productive or not, rather than the tools, machines and capital the organisation furnishes (Ibid).

Activity – 3

What do you understand by knowledge workers? People working in tourism and sector are knowledge workers. Do you agree with this statement? Why?

The Three Levels of Knowledge Based Development

As we have seen in the foregoing discussions in the information age knowledge has broader meaning. In the past also clever and creative people always used knowledge to design innovative products and services. But in information age instead of knowledge being vested in one or two creative people it will be embedded in systems and data bases and made available to all. Here to achieve maximum effectiveness, knowledge must be systematically accumulated, shared and purposefully deployed.

That means knowledge based society is centered on the three process of knowledge accumulation, knowledge dissemination of the accumulated knowledge and application of that knowledge for the productivity of the society. An analysis of this process of knowledge accumulation, dissemination and deployment in terms of skills, infrastructure and experience in relation to knowledge production will enable to assess the dimensions of knowledge society and economy. It is required to take stock of the literacy and higher education levels to examine the skills for knowledge accumulation. The size and growth of the tele and other communication network will echo the infrastructure required for knowledge dissemination and economic structure will reflect the level of application of the knowledge in knowledge based society. Now in the following sections let us examine each of this separately.

16.6 SKILL ACQUISITION AND TRAINING FOR WORK IN KNOWLEDGE SOCIETY

From the preceding sections of this unit we already gathered that the key characteristic of the knowledge economy lies in the belief that wealth (or productivity) is increasingly dependent on the development and application of new knowledge by specialist knowledge workers. It has been increasingly recognised that in knowledge society people's endowment of skills and capabilities and investment in education and training constitute the key to economic and social development. It is not so much physical capital, or human skills (human capital) that determines economic growth. It is the nation's capability to apply knowledge to knowledge itself that is essential to economic development. Economies are increasingly being built on a foundation of information, learning and adaptation. Here both the quantity of knowledge increases and the production of knowledge accelerates (Scott 1997).

So an important aspect of the emergence of knowledge society is the readiness to acquire new skills. ICT use represents an augmentation of human skills and capabilities. In examining the skills it is vital to develop measures that indicate the state of readiness to enlarge the use of information to develop knowledge. A principal indicator of such readiness is literacy level. Literacy is the first indicator of the attainment of the skills level needed for the productive use of ICT – an imperative of the information age. Here literacy means more than knowing how to read, write or calculate. It involves understanding and being able to use the information required to function effectively in the knowledge-based societies that will dominate the twenty-first century.

Illiteracy is a fundamental barrier to participation in knowledge societies. Vast majority of the illiterate population will be excluded from the emerging knowledge societies. The skill attainment is hierarchical. The hierarchy begins with the attainment of basic literacy. All the work processes in which ICTs can make a contribution to economic growth require basic literacy.

In knowledge societies it is recognised by governments and organisations that knowledge contributes to individual well being, societal and economic growth. This recognition is translated into action when new models for lifelong learning are encouraged. By investing in their human resources enterprises can improve productivity and compete successfully in increasingly integrated world markets. For e.g. in Denmark enterprises that introduced process and product innovation combined with targeted training were more likely to report output growth. Countries with highest incomes are also those where workers are most educated.

Even though higher education has always been formally designed as a structure for the production and organisation of advanced knowledge, the emergence of a knowledge economy and the importance of globalisation and ICT place new demands on higher education. Firms that wish to compete in the global economy will have to possess the organisational abilities/knowledge that enable them to maintain or increase their competitive

advantage in a turbulent market environment. It implies that for firms there is a need to have and/or train a flexible and versatile workforce. Firms, therefore, will express a continuous demand for courses in which their employees are retrained. In other words, great emphasis has been given to lifelong learning and the realisation of learning society. For the education of students, one of the implications of the knowledge-driven economy is that students will have to be prepared for a labour market in which they could change jobs many times during their working career. This means that students should acquire appropriate skills for this, and this will have to be reflected in the higher education curriculum – in its content, structure, length and mode of delivery. Thus in knowledge society higher education has itself become a tradable product.

The developed countries have a higher access to ICTs than the developing countries. Fast proliferation of ICTs in developing countries is widely due to sustained investment in education, research and development activities. Similarly the developed countries have been consistently spending a higher proportion of their public expenditure in higher education. Advanced countries invest at least 30 times more per student in education and training than in the LDCs. However the developing countries started spending more on education than being spend previously. It becomes evident that human resources development and training contributes to improved productivity in the economy, reduces skills mis-matches in the labour market and promotes a country's international competitiveness.

Another important consequence of the acceleration of scientific and technological progress is the diminished emphasis on remembering countless facts and basic data and the growing importance of methodological knowledge and analytical skills — the skills needed for learning to think and to analyse information autonomously. Today, in a number of scientific disciplines, elements of factual knowledge taught in the first year of study may become obsolete before graduation. The learning process now needs to be increasingly based on the capacity to find and access knowledge and to apply it in problem solving. Learning to learn, learning to transform information into new knowledge, and learning to translate new knowledge into applications become more important than memorising specific information. In this new paradigm, primacy is given to analytical skills; that is, to the ability to seek and find information, crystallise issues, formulate testable hypotheses, marshal and evaluate evidence, and solve problems. The new competencies that employers value in the knowledge economy have to do with oral and written communications, teamwork, peer teaching, creativity, envisioning skills, resourcefulness, and the ability to adjust to change.

Lifelong learning: The second dimension of change in education and training needs is the short “shelf life” of knowledge, skills, and occupations and, as a consequence, the growing importance of continuing education and of regular updating of individual capacities and qualifications (Wagner 1999). In OECD countries a lifelong-education model is progressively replacing the traditional approach of studying for a discrete and finite period of time to acquire a first degree after secondary school or to complete

graduate education before moving on to professional life. Graduates will be increasingly expected to return periodically to tertiary education institutions to acquire, learn to use, and relearn the knowledge and skills needed throughout their professional lives. This phenomenon goes beyond the narrow notion of a “second chance” for out-of-school young adults who did not have the opportunity to complete much formal study. It has more to do with the updating and upgrading of learning that will be required in order to refresh and enhance individual qualifications and to keep pace with innovations in products and services. The concept of “lifelong learning for all” adopted in 1996 by the OECD ministers of education stems from a new vision of education and training policies as supporting knowledge-based development. Lifelong-learning requirements may lead to a progressive blurring between initial and continuing studies.

Activity – 4

What is the significance of lifelong learning in knowledge societies?

16.7 ICT INFRASTRUCTURE AND KNOWLEDGE DISSEMINATION

In knowledge societies not only the creation of knowledge is important, its dissemination and knowledge sharing with the world around is equally important. In the information age ICTs are the main medium for knowledge dissemination. In this information age the info-technological revolution is restructuring the global social economic equations — shifting from income divide to knowledge divide. We stand at the dawn of the new millennium which ushers with it a world of greater interconnectivity, accelerating flow of data and shrinking time and national boundaries. Accessibility of World Wide Web (WWW) is turning world into global village. The decreased cost of processing and dissemination of information and increased convergence of information, computer and telecommunication technologies became the base of knowledge societies.

Knowledge sharing is the interactive process of making the right information available to people at the right time in a comprehensible manner to enable them to act judiciously- enriching the knowledge base in the entire mechanism. Knowledge sharing can occur at all levels— between countries, within a country, between communities and among individuals. It can occur from local to global, from poor to rich and vice versa. Knowledge dissemination and sharing became indispensable in day today life, for good governance, participation of people in their development etc. Unrestricted and continuous sharing of global and local knowledge between policy makers, public and private sectors and civil society heralds the way forward to an empowered knowledge society, which can efficiently manage the development change process. It ensures inclusion of poor and marginalised communities in the change process.

Rapid technological advance since Second World War occurred due to the convergence of telecommunications and computing technology, known as Information and communication technologies (ICT). ICT have been the drivers of the knowledge society. They are providing new and faster ways of delivering and accessing information, innovative ways for real time communication and new ways to do business and create livelihood opportunities. Since ages, knowledge has been passed on from one generation to the other through written text, folklore, word of mouth religions and customs. The knowledge however remained preserved geographically and hierarchically. On the other hand ICT breaks all the natural, social, cultural and hierarchical barriers to knowledge sharing. It has the potential to help the people to leapfrog some of the traditional barriers to development by making use of knowledge in various ways such as by improving access to information, expanding their market base, enhancing employment opportunities, making government services work better etc.

In the contemporary global context the use of information and communication technologies (ICTs) is expanding rapidly. ICTs comprise a diverse set of technological tools and resources to create, disseminate, store and manage data and information. Traditional ICT tools such as television, radio and the telephone have proven their effectiveness in promoting development. The emergence of computers, the Internet and wireless communications technology, along with powerful software for processing and integrating text, sound and video into electronic media, comprise modern ICT. For the past two decades the spread of the global electronic network of computers, popularly referred to as the Internet, and wireless telephony has generated an unprecedented global flow of information, products, people, capital and idea. Internet based electronic mails, newsgroups, discussion groups and interactive web sites hold boundless potential to reach everyone who is connected to the Internet to target specific information.

The greatest advantage of ICTs is the reach and low cost of technology and data transmission. Technically, every individual can have a private or public access to a data terminal, which connects him to each and every individual in the world. Knowledge dissemination and knowledge sharing in knowledge societies depend on ICT infrastructure, which mainly include telecommunications, computer-mediated communication — the Internet and mass media of communication.

Tele-communication Network

Tele communication network is a key facilitator to knowledge society. Tele communications system is one of the most complex systems ever built by the humankind. It has penetrated to every aspect of human life. In the 19th century, the invention of the telegraph and the telephone forever changed how messages moved around the world.

Telephony made possible virtually instantaneous two-way communication between any two places in the planet connected by appropriate wiring and switching devices. In the beginning most of the telephony networks were

developed as public monopolies, though US was an exception. Extensive international organisational arrangements were established to ensure interconnectivity through common networks standards. The International Telecommunications Union (ITU) and related Treaty arrangements represent some of the first attempts to develop effective forms of international governance (Wiesman 1998). Since 1980s governments in all countries have come under increasing pressure to commercialise, privatise and deregulate their tele communications industries and by late 1990s virtually all national telephone networks have been at least partly privatised and opened up to national and international competition. This resulted in drastic decreases in the price of international communications services and thereby promoting a faster and cheaper knowledge dissemination.

Tele communications is now but one form of the processing information; transmission and linkage technologies are increasingly diversified and integrated into computer-operated networks.

The latest development in the tele communication technology, the mobile phones shows a convergence of different communication technologies. Although the cell phones, or at least the technology behind them, have been around since the 1960s, tremendous technological improvements in cell phones started happening for the last one-decade and half. Sending images, text messages and, of course, sound. Every month, it seems, a new cell phone comes out that's "smarter" than the last in its ability to gather and transmit a growing amount of data: voice, images, news and more. Of late technologies of photography, broadcasting, audio system and Internet all converged into one gadget of cellular phone.

Computer Mediated Communication Network — the Internet

The Internet network began in 1960s (see Box 16.3) in United States and soon became common. Internet network became the backbone of the computer- mediated communication in 1990s, since it gradually links up most networks. In the mid-1990s it connected 44000 computer networks and about 3.2 million host computers worldwide with an estimated 25 million users and it is expanding rapidly (Castells 1998). In the year 2005 Internet network crossed 6 million computer networks. In 2020, globally 4.5 billion people are connected with internet. A detailed analysis of internet access is already explained with unit 3 of this course, learners may refer it.

Box 16.3: The Beginning of Internet

The Internet originated in a daring scheme imagined in the 1960s by the technological worriers of US Defence Department Advanced Research Project Agency (DARPA) to prevent a Soviet takeover or destruction of American communication in case of nuclear war. To some extent it was the electronic equivalent of the Maoist tactics of dispersal of guerrilla forces around a vast territory to counter an enemy's might with versatility and knowledge of terrain. The outcome was a network architecture that, as its inventors wanted, cannot be controlled from any centre, and is made up of thousands of autonomous computer networks that hane innumerable ways

to link up going around electronic barriers. Ultimately ARPANET, the network set up by the US Defence Department, became the foundation of the global, horizontal communication networks.

Source: Castells 1998

The rapid evolution of microprocessor technology since its discovery as well as the swift advances in fibre optic network technologies resulted in rapid growth of computing power and the communication power of people around the world. This advances in the technology enabled the development of new types of services to be used in digital format. Technological advances have also slashed the costs of information and communication. Internet telephony offers much cheaper long-distance communication than the traditional telephone. The cost of transmitting digital information anywhere in the world has also fallen dramatically. Until the early 1980s, communication was generally restricted to analog signaling, which means each telecommunication network was designed to carry different types of information separately. Voice traffic was carried over the telephone system, text used a separate telex network and high-frequency broadcast networks were dedicated to sending video and audio signals. With digital communication, these separate networks are becoming less differentiated. The Internet currently carries a combination of pictures, drawings, moving images, sound and text. The technologies of telephone and television, the radio and camera, the fax and word processor, the data base and the spread sheet all are integrated into one system, the Internet, which makes Internet unique in its capacity to support two-way interactions. Since early 1990s the World Wide Web (WWW) has become the mainstream environment for creating and disseminating digital information.

Previously access to Internet was almost exclusively from personal computers. This has been changing for the past couple of years. As mentioned earlier now Internet is available through mobile phones (data enabled wireless telephones). This development did enabled users in remote areas to access the Internet and its related services without a basic ICT infrastructure.

Table 16.3: World Internet Usage and Population Statistics in 2005

World Regions	Population (2001 Est.)	Population % of World	Internet Usage, Latest Data 31 Mar 2021	Usage Growth 2000-2021	Penetration Rate (%Pop)	Internet World %
Asia	4,327,333,821	54.9%	2,762,187,516	2,316.5%	63.8%	53.4%
Europe	835,817,920	10.65	736,995,638	601.3%	88.2%	14.3%
Africa	1,373,486,514	17.4%	594,008,009	13,058%	43.2%	11.5%
Lain/America Caribbean	659,743,522	8.4%	498,437,116	2,658.5%	75.6%	9.6%

North America	370,322,393	4.7%	347,916,627	221.9%	93.9%	6.7%
Middle East	265,587,661	3.4%	198,850,130	5,953.6%	74.9%	3.9%
Oceania / Australia	43,473,756	0.65	30,385,571	298.75	69.9%	0.6%
WORLD TOTAL	7,875,765,587	100%	5168,780,607	1,331.9%	65.6%	100.0%

Source: <http://www.internetworldstats.com/stats.htm>

Mass Media of Communication

Wireless broadcasting was one of the great contributors to the development of oral communications culture in the 20th century. It became one of the important mediums for knowledge dissemination in information age. Unless like telecommunication where communication happens from person to person, here knowledge is transferred from one person to many. The mass media are media of communication—newspapers, magazines, television, radio, movies, videos, CDs, and other forms—that reach mass audiences. Out of this visual media of which visual media became predominant communication medium especially in the information age. Led by television there had been a communication explosion in the last three decades. Marshall McLuhan argues that media influence society more in terms of how they communicate than in terms of what they communicate.

Activity – 5

Do you think India is transforming towards a knowledge-based economy? Why?

16.8 DIMENSIONS OF WORK PARTICIPATION IN KNOWLEDGE ECONOMY

We have already learnt that in the postindustrial information society knowledge and information are the major sources of productivity and growth. The Asia-Pacific Economic Co-operation (APEC) Economic Committee extended this idea to state that in a knowledge based economy “the production, distribution and use of knowledge is the main driver of growth, wealth creation and employment across all industries” (APEC 2000). There is a growing belief in the past few decades that knowledge can do more than increasing economic growth; it can also lead to structural change in an economy and therefore society. Such change differs from the incremental changes to which all economies are constantly subjected. Neef (1998) states that the new products and services resulting from technology growth may bring about profound changes in the way we live and work. He argues that this economic transition is characterised by the changing nature of work from low skill to high skill. This is reflected in the rapid growth in the services sector since the 1960’s and in more recent changes in the goods-producing sector towards employing higher-skilled employees.

It is important to note here that the classical theory of post industrialism combines three statements which show the trend in the shifting employment pattern (Bell 1976):

- a) The source of productivity and growth lies in the generation of knowledge, extended to all realms of economic activity through information processing.
- b) Economic activity would shift from goods production to services delivery. The demise of agricultural employment would be followed by the irreversible decline of manufacturing jobs, to the benefit of service jobs, which would ultimately form the overwhelming proportion of the employment. The more advanced an economy, the more its employment and its production would be focused on services.
- c) The new economy would increase the importance of occupations with high information and knowledge content in their activity. Managerial, professional and technical occupations would grow faster than any other occupational position and would constitute the core of new social structure.

According to Toffler, the “second wave” formed an entirely new concept the “massification” in which we find mass production, mass markets, mass consumption, mass religion, mass political parties, weapons of mass destruction etc. He argues that the third wave will show a reverse trend where minority interests will come to the fore. The economy will be based on the productivity of knowledge work and knowledge worker. Whereas the organisations in second wave were built around the availability of land, labour and money, the third wave company will be firmly based on development of knowledge and imaginative use of technology. Hence it is obvious that in the information age there will be a change in the economic structure where there will be tilt towards the more openings in knowledge based economic sector, i.e. service sector. The contribution of high value added manufacturing and services to the national economy is measured as one of the key indicators of a knowledge economy. This is because they are more knowledge intensive and less labour intensive.

We have already seen that the revolutionising developments in information, computer and telecommunication technologies and its low cost and high accessibility created a marked change in the employment structure of both developed and developing economies. In knowledge societies knowledge-based service industries form a significant proportion of GDP and there is a reliance on knowledge technologies to foster business competitiveness, economic and employment growth. And this is evident if we examine the economic structure of different countries. Data shows that the agricultural workers who form the majority of the work force till the early 20th century and the industrial workers who grew very fast in the second half of the century in the developed countries now declined to be minority in the workforce. Now the workers of the service sector are replacing these categories of workers very fast all over the world though varying degrees.

Manuel Castells (1998) roughly classify service economy into different categories. This includes producer services (banking, insurance, real estate, engineering, accounting, miscellaneous business services and legal services), social services (medical, health services, hospital, education, welfare and religious services, non-profit organisations, postal service and miscellaneous social services), distributive services (transportation, communication, and whole scale and retail services) and personal services (domestic services, hotel, eating and drinking places, repair services, laundry, beauty and barber shops, entertainment, and miscellaneous personal services). He argues that there is a significant increase of job participation in these services in G7 countries in the past few decades. According to him the evolution of employment during post-industrial period (information age) shows at the same time, a general pattern of shifting away from manufacturing jobs, and two different paths regarding manufacturing activity: the first amounts to a rapid phasing away of manufacturing, coupled with a strong expansion of in producer services (in rate) and in social services (in size), while other services activities are still kept as source of employment. A second, different path more closely links manufacturing and producer services, more cautiously increases social services employment and maintains distributive services (p 215).

16.9 WOMEN IN KNOWLEDGE SOCIETY

The emerging knowledge societies, which are based on global competition, progress in information technologies and a move towards knowledge-based economy, pose several opportunities and challenges to women.

The New Job Opportunities for Women: The new ICTs enabled the work to be brought to homes and allows for better accommodation of work and family schedules and this created new types of jobs that favoured women. Women have also been able to capture a large proportion of jobs in ICTs-enabled services. The most promising potential for women is in the creation of new jobs at call centres and in work involving data processing. The ILO reports “telecentres and fax booths have created a quarter of a million jobs in India in the last four years alone, a huge proportion of which have gone to women”.

The ILO Report adds, “in terms of numbers employed, the role of women in the digital economy has become more marked in on-line, export-oriented information-processing work rather than in telecommuting”.

Internationally outsourced jobs, such as medical transcription work or software services, do make a considerable difference to the lives and career paths of women in developing countries. In software, women enjoy preferences on a scale that they never experienced in any other field of engineering and science.

The ICTs have enabled women to tap global markets for their products and raised incomes. New technologies and networking are new means by which women are empowered to improve their economic and social status. Let us see some examples.

Sapphire Women, created by a woman in Kampala, Uganda, is an organization that supports women who have lost family members to AIDS, as well as supporting orphans created by the AIDS epidemic. The members of Sapphire weave traditional Ugandan baskets which are then sold on the Internet with the help of Peoplink, an American-based NGO with extensive experience in on-line sales of handicrafts.

The Grameen Bank Village Phone project, which provides mobile cell phones to its mostly female members in Bangladesh, demonstrates not only the employment-generating impact of the women who collect fees for the usage of their mobile phones, but other positive spill-over effects as well. Mobile phones and access to the Internet have given rural Bangladeshi women access to learning, created new opportunities for autonomy and improved their position in community and public life.

These examples illustrate how technology can improve the lives of poor women by opening up opportunities they were previously excluded from. Electronic networking between women has led to new social and economic phenomena, such as e-campaigns, e-commerce and e-consultation. The empowerment of women via technology in this way enables them to challenge discrimination and overcome gender barriers (ILO).

However, all these new avenues have been created around the contemporary development pattern of globalisation. This while creating some new opportunities for women also leaves negative imprint. While more competition sets in, the attention given to labour welfare decreases markedly. Moreover, most of the newly created job opportunities are in the informal sector, which provide no job security. All these compels women to work in an exploitative work atmosphere.

Activity - 6

Examine the opportunities and challenges women have in the present economic scenario shaped by large scale technological development.

16.10 LET US SUM UP

During the second half of the 19th century there began a great revolution in storage and communication of information. After industrialisation society moved towards a post-industrial information age where production dissemination, and deployment of knowledge became the basis of productivity and social advancement. The evolving information/knowledge societies marked by rapid advances in science and technology, convergence of the information, computer and communication technologies and the reduced cost of processing and disseminating information; and the increasing connectedness of nations. These revolutionary changes said to transform societies into smart communities largely through the impact of the converging new information, computer and telecommunication technologies (ICTT).

This unit examines the background of the information revolution and the characteristic features of the emerging society. It also analyses why and how knowledge becomes the basic constituent of this society.

16.11 REFERENCES AND FURTHER READINGS

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16.12 CHECK YOUR PROGRESS: POSSIBLE ANSWER

Check Your Progress: 1

1. In his book *The Third Wave*, Alvin Toffler describes three types of societies, based on the concept of 'waves' - First Wave revolves around agriculture-based society; Second Wave characterised industry society, and the Third Wave is the post-industry society.
2. Advances in microelectronics and software have to be added major leaps forward in networking capabilities, which was made possible by major telecommunication and computer networking technologies developments. Major advances in optoelectronics and digital packet transmission technology dramatically broadened the capacity of transmission lines.
3.
 - a) The basis of knowledge-based development in knowledge societies is the generation, dissemination and deployment of knowledge.
 - a) Scientific knowledge is considered an asset in the knowledge society, and the scientific and technical group will rise into prominence.
 - b) In the knowledge society, inequality is defined in terms of exclusion from knowledge.
 - c) The conflict is between minority knowledge workers and the majority of traditional workers.
 - e) Knowledge will be a key competitive factor for career and earning opportunities.

UNIT 17 DEMOCRACY AND DIGITAL MEDIA

Structure

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- 17.1 Learning Outcomes
- 17.2 Understanding Concepts of Democracy
 - 17.2.1 Basics of Democracy
 - 17.2.2 Democracy and Media
- 17.3 Linkages between Democracy and Digital Media
 - 17.3.1 Elections and Digital Media
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 - 17.3.3 Social Media and Politics
- 17.4 Avenues of Linkages
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17.0 INTRODUCTION

Democracy is centred around the ideas of power to the people whereby they decide what the policies which are right and appropriate for them so that their rights can be safeguarded. Digital media has a role to play in ascertaining such democratic freedom to the people and securing their rights. It then becomes essential to understand how digital media can enable a greater democracy by encouraging greater participation of people in it. This Unit covers the aspects of how the Internet is changing and how people are participating in movements for democratic rights, reforms, and freedom. This Unit also includes certain case studies about social media movements that gave rise to greater participation by people in democracies around the India's

Experience with the Internet world that have altered the systems of governance in countries. Social media has brought several people together under a single leadership in ways that could not have been envisaged by mainstream media or political parties. In this Unit, we shall discuss a few global and Indian experiences of digital media and democracy and how these can affect us in making our society more responsible.

17.1 LEARNING OUTCOMES

After reading this Unit, you will be able to:

- discuss the fundamental relationship between democracy and digital media;
- elaborate on the different avenues of digital platforms for democratic participation;
- explain the users' participation in democracy;
- understand various definitions around democracy and digital media; and
- draw linkages between elections and digital media.

17.2 UNDERSTANDING CONCEPTS OF DEMOCRACY

According to Susan D. Moeller (2010), 'democracy is a system in which everyone has a voice and all voices are heard.' Further to that Moeller states that democracy is not just a political term that stands for 'power to the many' or 'greater participation' of people as that would merely be a hollow description of the word. The true meaning lies in how and in what ways are the various voices being heard. Thus there is a need for an aggressive and independent 'fourth estate' as that can be a vital and significant tool in making 'democracy' a truly vibrant one with diverse opinions, voices, views, and concerns. However, the fact of whether those concerns will find a proper hearing and will have an impact and effect on policymakers is a subject of debate.

17.2.1 Basics of Democracy

You might have heard about the term democracy is derived from two Latin words- 'Demos' and 'Kratos' where 'demos' means common people of an ancient Greek State and 'Kratos' meanings power. Thus, the 'power of the people' is what democracy truly means. Dahl (1971) identifies seven main criteria that should exist in a country to be called a 'democracy' or a 'polyarchy' (power vested in many).

These criteria are:

- control over government decisions;
- frequent and fair elections;
- universal adult suffrage [right to vote];
- right to run for public office;

- freedom of expression;
- access to alternative sources of information that have not been monopolised by a few; and
- freedom of association

Hence we see that a democracy needs to be vibrant and dynamic with Democracy and Digital Media voices of people being heard. This is possible only when diverse voices are raised through various media platforms, different channels, and sources of information. The Internet seems to be bridging the gap, which seems to have existed for a long time in the field of media.

This brings us to the section on what exactly is the interplay between democracy and digital media and what all does it include.

17.2.2 Democracy and Media

Digital media includes all such content and form that uses technology and is coded, modified, and distributed on digital electronic devices and platforms. It includes not just websites of mainstream media organisations but also blogs, Wikis, YouTube and Instagram, etc. These days the micro blogging websites are doing valuable work on keeping mainstream media on its toes.

However, there are different challenges and numerous goals related to the state of media within a digital landscape. One of the most significant challenges is to keep up with the changing face of modes of production, use, and practices related to online technology. There is a need to strike a balance between theory and practice. The practices mainly include reform or changing policy and legislation around ownership and concentration, or the establishment of grassroots and independent news channels. Another aspect of digital platforms is that it helps you to understand how independent channels are revolutionising and engaging the Internet and masses.

Activity – 1

At this juncture of the Unit, it would be a good idea for you to take stock your relationship with media systems. What kind of media habits do you have and how much of it do you use to engage with the outside world?

- How many hours do you spend on your mobile phone?
 (regularly)
(hourly/occasionally)
- What political websites do you read or use daily on the Internet?
 - regularly
 - occasionally
- Do you have a blog/social media account? Yes No
- Do you write on democratic and political issues? Yes. No.

5. How often do you write for your blog/social media account?
- Daily - Regularly - Occasionally

6. What democratic issues do you write on?
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.....
.....
.....

7. Have you produced similar content for any other online platform?
[] Yes / [] No.
If yes, how many likes, comments, shares have you received?
.....
.....
.....

17.3 LINKAGES BETWEEN DEMOCRACY AND DIGITAL MEDIA

The media needs to become more accountable in a democracy by holding those in power accountable to the public. They freely question or are at least supposed to ask questions to authorities based on their framing of events. In order to assist in the functioning of a healthy democracy, it becomes imperative that the media itself is free, independent, and accountable. With the proliferation of new voices, the responsibility is on the media of putting information across with accuracy. In this regard, ‘digital media’ has made sure that such voices have emerged but with what consequence is the larger question. Here we will assess how those diverse voices that find a platform online can be heard with effective outcomes and meanings for elections, political participation, and democracy in general.

17.3.1 Elections and Digital Media

Williams and Delli Carpini (2011) argue that among other things, what is considered “political” has widened with digital media beyond what was set out by traditional media. Another theory that is prominent and that focuses on individual media is agenda-setting theory (McCombs et al., 2013) which tells us those specific political topics are fore grounded in the media and force us to think about them instead of others. It is said that India and China account for one-third of the world’s online population. In India, however, Internet penetration is still low, and the use of digital media is heavily skewed towards the elite. The debates around new media and politics have, however, focussed on two broad themes-democracy and the public sphere (Habermas, 1982) and how capitalism skewed politics towards powerful economic elites (Castells, 2011).

17.3.2 Political Parties and New Media

When we study the scenario vis-a-vis political parties, it raises concerns about whether the media contribute to more responsiveness by the government, or the opposite—more elite control? Here one notices that there has been strong collusion between political and economic elites which also indicates that in the Indian media system autonomy is weak. However, the Internet has been a strong force among a small, mostly young and urban population. Although smartphones are yet to reach the majority of the population, online politics is shaped by how smartphone adoption fits into the broader-skewed-media landscape.

Most political parties now have thousands of WhatsApp groups and social media accounts to reach a wider group of citizens. However, the reach is limited to the urban elite. Among various political parties, political ideologies arise from the public, and they are articulated within parties and in the media and the contest for legitimacy and power. Even without widespread Internet penetration, new technologies can be vital for politics, and this is illustrated via the use of mobile phones in an Indian election.

Online activism increasingly influences politics in recent times, more so because it provides an alternative to entrenched political power and its nexus with the traditional media.

17.3.3 Social Media and Politics

There has been a meteoric rise in social media platforms and citizen journalism with examples ranging from leaked photos of Abu Ghraib to a cellphone video of Saddam's hanging, the Indian Ocean tsunami of 2004, and London bombings of July 7, 2005. There are pictures clicked by ordinary citizens that are being used by mainstream media to depict a variety of voices which is seen as a measure of 'publicness' (Heikkila & Kunelius, 2002). There are many instances where it can be shown that social media has affected social change in unprecedented ways. These changes are visible in the way politics is done by political parties and how governments are run—both in developed and developing countries.

In the recent parliamentary elections in India, it is pointed out that parties were strategically engaging in new and old media to maximise their reach and information was being shared digitally in large numbers which have now become a potent way of political involvement. In a study in Norway it was found that as individual candidates took part in Twitter campaigning individually for themselves and their parties, they were likely to exercise more influence than those who did not take up such online campaigning on the micro blogging site (Karlsen & Enjolras, 2016). Valeriani & Vaccari (2016) suggest through a survey study in Germany, Italy, and the United Kingdom that social media serve as a virtual platform to bridge the gap between the political parties and the public and those who are not party members but are party loyalists engage in online activity to reach out to people. Thus, Chadwick & Stromer-Galley (2016) argue that digital culture is changing how parties reach out to the people telling them about their ideology, social work and election campaign.

Check Your Progress: 1

Note: 1) Use the space below for your answers.

2) Compare your answers with those given at the end of this Unit.

1. What are the two main debates around new media and politics?

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2. Give two instances to indicate that social media is being used for political purposes.

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17.4 AVENUES OF LINKAGES

This brings us to the section where we will draw linkages between mainstream and alternative media on the online spheres - are these complementary to each other or are they contesting each other for media space vying for audience attention?

17.4.1 Mainstream Media

A lot has been talked about media reform, activism, and resistance on the Internet where such political movements have been presented as networked forms of communication at the transnational level (Castells, 2004). However, at another level, these are just tools and technology not more than a plane of interaction. In recent times there is a clamour among mainstream media organisations to vie for online space for their news content. Simultaneously, there is also a trend towards using social media as ‘vox pops’ within the media dialogues that take place on-screen or in newspapers even as online media are converting into ‘multimedia newsrooms’. Social media has created such a competition for the mainstream media that specific progressive mainstream media organisations are struggling to come to terms with blogs, wikis, and other content management systems making it more participatory within the journalism conversations (Gillmor, 2003) and making such audiences as equal partners and collaborators in the news process.

Despite such voices one being heard within mainstream media, it is the alternative media which is more participatory and redefines a publicness by altering the nature of journalism so that the facts are determined not by a handful of journalists or reporters or editors in an organisation but by highlighting the discursive, dialogic and deliberative nature of public engagement with the news.

17.4.2 Alternative Media

As we continue to debate whether participatory journalism and traditional journalism collide head-on or complement each other (Lasica, 2003), let us discuss here a few of instances that go on to indicate how the meaning of empowerment and information are being redefined through independent media.

Alternative media, on the one hand, makes significant contributions to the social and political life of amateur media producers, on the other hand, these also challenge the structures of mass media. In more ways than one, they have played a role in empowering the people who have used them, at the same time making efforts to bridge the 'digital inequality'.

The Sao Paulo Project, in Brazil, for one has brought together grassroots undertakings towards bridging the digital gap by working with computer recycling and using Linux so that activists/artists collective, independent media, and the institutional segment who work with the marginalised and poor people access to the digital age and can come to the fore (Rosas, 2004b). It has created a network of Brazilians who had not previously met, and it has laid the conditions both for the organisation of the event and for future collaborations.

There are also examples of the American Indymedia and South Korean Ohmy News which point to the early successes of alternative media. Instead of becoming simply PR tools for opposition groups, such media promote activism and reform.

This brings us to the question of what are the different forms of alternative media. Let us discuss that in the next section.

17.4.3 Genres of Alternative Media

Alternative media as we know by now (as we have discussed it in detail in the course MJM024) question the dominant cultures and themes and are viewed as 'counter-hegemonic' if viewed from the lens of Antonio Gramsci.

These forms of media may include anything from print, radio, video, film, Democracy and Digital Media Internet to street art, performance, and music.

As far as the genres of new media and their role in alternative media projects are concerned, there are few main types, e.g. culture jamming, participatory journalism, alternative computing, mediated mobilisation, and shared knowledge. Culture jamming comes in the form of Internet memes and marketing and is a commentary on popular culture, advertising, and such art forms dealing with issues of consumerism and capitalism. Participatory

journalism refers to radical news on web-based sources which are mainly critiques on online news services and blogs. While alternative computing deals with the material infrastructure of information and communication technologies (hacking, open-source software and file sharing are few examples), mediated mobilisation refers to communication practices that ignite social movements or cultural projects. Common knowledge provides alternatives to top-down creation and dissemination of knowledge (Wikipedia being one such example).

Alternative media has also recently come to be an umbrella term that includes such media as tactical media, second-tier media, DIY (Do-It Yourself) media, and independent media. Tactical media talks about a form of media activism that promotes temporary media alternatives to permanent alternative media outlets. First-tier sites such as Facebook, LinkedIn, and Twitter are quite popular but recently second-tier social media sites (Meebo, Tumblr, Pinterest) have been gaining popularity as they house information that can connect back to the first-tier sites. DIY media may be defined as the use of Web 2.0 applications, specifically in terms of allowing users to become producers and not merely consumers of media.

Activity – 2

Visit two websites-one may be a mainstream news organisation like CNN, BBC, or that of The Times of India, and another of an independent media like Indymedia.org or OhmyNews.org. Compare there two media platforms based on their news coverage.

Check Your Progress: 2

Note: - 1) Use the space below for your answers.

2) Compare your answers with those given at the end of this Unit.

1. Enumerate the differences between mainstream and alternative media.

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2. What are the different genres of alternative media?

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17.5 CITIZEN JOURNALISM AND SOCIAL CHANGE

Citizen journalism and social media management to bring about social change, but what about its access, equality, and outreach in a world dominated by capitalism. Ideals of access, inclusion, discussion, and participation come to take place within technological networks which make us question its efficacy for most of the world's people (Dean, 2005). Communicative capitalism mentions that capitalism can be viewed in the broader context of network and communication technologies where the citizen is missing. Machesney (2013), in this regard, says that capitalism and democracy vie for opposite outcomes-the former creates massive inequality, and the latter is premised upon political equality. On similar lines, Khiabany (2016) notes that the Green Revolution did not bring much change in Iran, but it was perfect for Twitter's business. This also brings us to the debates around democracy and democratic freedoms.

Let us now talk about what are the central tenets of citizen journalism and its forms, how it affects the Internet, and how such forms of journalism promote democratic participation.

17.5.1 Tenets of Citizen Journalism

There are many essential principles or tenets that open journalism should follow, and these are transparency, responsiveness, substantive participation, collaboration, and networked presence.

Transparency is coming up as an essential hallmark of citizen journalism where there is freedom of expression and space where diverse views are shared more openly and without any inhibitions and pressures. News gathering and disseminating of information become more responsive to various needs. There is a lot of debate and discussion around it on multiple platforms. Many reporters and editors are using such platforms to diversify opinions and participation. The information-sharing level is high on this platform, from fan communities to blogs and digital community-building that takes place. Citizen journalism, however, can take up many forms.

17.5.2 Forms of Citizen Journalism

It can be opportunistic when there is a bystander, and a citizen just happens to be present at the place, and the incident occurs. They are there as witnesses and click photographs, or create an account of what happened at that point. What the person does with the information is his/her own choice-they may post it on their social media accounts or work with the media to get the message across.

The other form is where the journalist has placed himself purposely in that sort of situation in order to capture an event as it unfolds to communicate it to the rest of the world. The individuals would not have any journalistic training or background and therefore get classified as citizen journalists, an ordinary person reporting like 'professionals'.

17.5.3 Digital Media and News Values

Regarding some fundamental news values on digital platforms, Mark Lipton says that “One can argue that the sociability of new web processes is producing new pathways for ‘truth’. Truth is the main guarded principle around which journalism functions.” Boler (2010) says that if we go by this definition of truth, then there are two ways of viewing it—that truth is being constructed by mainstream media and truth as being constructed by other forms of media and sources available on the Internet, on blogs, wikis, Instagram posts, Facebook, to name a few. Whenever you begin to doubt the dominant discourses within the mainstream media and the ‘social construction of reality’ by the dominant media with the help of public relations and ‘spin,’ we are often accused of being paranoid conspiracy theorists. However, the Internet offers several ‘facts’ in addition to those being presented in mainstream media. Thus, while the credibility of mainstream media organisations is at stake here, on the one hand, on the other, the bigger question is how far can the online news be trusted?

It thus becomes essential to understand how alternative media, independent media, citizen journalism, etc. create agendas, and how are they performing the function of agenda-setting online? Boler (2010) says that there are three main issues to think about around such media spaces—the idea of space as socially constructed, the concept of the flow of ideas, and the role of imagination in the construction of ‘subjectivities’. Pierre Bourdieu (1991) argues that symbolic power is the power to construct reality. Alternative media, thus, constructs a reality that opposes the conventions and representations of mass media. The challenge, in no small extent, what is out there on channels, on your radio set, and in your newspaper. However, the credibility question of these online news sources also looms large. While the journalists and publicists can manipulate both the element of change and relevance to a story to maximise its strength for the audience, there is little scope for such manipulation in the blogs and independent media. There is also a lesser chance of bias creeping in media platforms online. Even if there is subjectivity around a blog, the audience is free to reject it and move on to some other more credible source of news. However, there is still greater participation by citizens in countries around the world in online platforms and its usage for meaningful change and for promoting ‘deliberative democracy’.

Let us now expand on what is user-generated content, yet another term used in the context of digital media.

17.5.4 User Generated Content

User-generated content is a term applied to mean that consumers or customers are no longer passive receivers of information, whether it is on sites like YouTube or blogs, products featured on e-commerce sites, etc. These interactions take the form of product reviews and other consumer initiated contributions.

This form of content points to the increasing form of media pluralism and indicates that the content we have access to is more diverse than we have

India's Experience with the Internet ever had in the past. There has, however, been recent concern regarding the dominance of a few platforms in many democracies (Twitter in Japan, Naver in the Republic of Korea, Instagram and LinkedIn in Africa, Vkontakte and Odnoklassniki in Russia and Central and Eastern Europe, and We Chat and QQ in China).

Such content has been incorporated in mainstream journalism and in marketing where it is said to build more trust for the brand and organisation, encourages more participation, encourages more traffic to the brand websites, increases follower count, and ensures that the purchase decisions are maximised. Thus, we see there are many benefits of such content, including personalisation which is a welcome trend.

Activity – 3

You should create an account on any of the platforms of citizen journalism. Post a picture or upload a video or generate content and see how many likes and comments you get.

Check Your Progress: 3

Note: - 1) Use the space below for your answers.

2) Compare your answers with those given at the end of this Unit.

1. What are the strengths and weaknesses of citizen journalism?

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2. How is digital media engaging audiences, for better or worse?

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17.6 EXPERIENCES OF INTERPLAY

There have been instances in India and abroad that indicate the growing use of digital media, social media in particular, for political and social activism. Many cases are reported from Africa, Asia, and the West that have shown the growing importance of online activism and politics, especially during

elections. Some cases from India, China, Sweden, and the United States of America have been discussed below.

17.6.1 Global Trends

For example, in February 2003, millions of people worldwide were mobilised to protest against the Bush administration's push for war against Iraq. The Arab Spring of 2010 can be cited too. Another example is the Egyptian revolution of January-February 2011 where thousands of protestors, demonstrators, and youth decided through online methods to meet at Cairo's Tahrir Square and protest against the high-handedness of President Hosni Mubarak of Egypt and his regime which was fraught with corruption, electoral fraud, unemployment, state-of-emergency laws among other such practices. This resulted in the overthrow of the Mubarak government. So digital media cannot be undermined.

Larrson & Kalsnes (2014) found that Twitter and Facebook are used Democracy and Digital Media extensively by politicians in Sweden and are used more by politicians who are 'underdogs', tend to be younger and non-incumbents and outsiders rather than prominent insiders. Regarding the scene in the United States, the debate is that digital media leads to political polarisation. However, Messing & Westwood (2014) show that endorsements of news items via social network sites (Facebook likes, for example) prompt more people to read these news items. Some Congressmen, however, use Twitter more for self-promotion rather than engaging with the public.

In the case of China, Pan (2016) argues that Baidu (Google equivalent), WeChat (Facebook or Twitter equivalent) and Alibaba's Taobao (Amazon or eBay equivalent) better meet the needs of the Chinese markets but face problems finding inroads into foreign markets due to policies or legal loopholes. Regarding online protests in China, Yang (2014) says "Although hundreds of Internet protests occur every year, the main issues focus on corruption, social injustices against vulnerable persons, abuse of power by government officials."

17.6.2 Indian Experiences

Similarly, India Against Corruption movement in April 2011 was seen as a 'social media revolution' when Anna Hazare decided to go on fast unto death at Ramlila Maidan in New Delhi demanding enactment of the longpending Jan Lokpal Bill.

In India, Doron and Jeffrey (2013) point out that the use of mobile phones was a crucial factor in the victory of Mayawati in Uttar Pradesh state legislative assembly elections in 2007 although influential newspapers and television channels were disdainful of her party, the BSP (Bahujan Samaj Party) and hostile to Dalit politics. The other parties, they argue, lacked such mobile-phone-based mobilisation through which irregularities were reported to the Election Commission and mainstream media was bypassed.

In India, there is significant concern around internet penetration and digital exclusion which presses us to discuss the topic of 'digital inequality'.

Digital inequality is a term that refers to how technology and its usage and non-usage can create divisions in society as 'haves' and 'have-nots'. There is still a section of the society who are left out of the benefits of technology. This itself leaves those marginalised communities outside the gambit of 'democracy' where the real action is taking place in terms of politics, social change, protests, and movements. If the infrastructure is not provided to the poor for their fullest development through technology and ICT (information and communication technology), then how can social and economic growth take place, this is a pertinent question before scholars.

17.7 LET US SUM UP

It may thus be concluded that digital media takes up many forms where there are mainstream media with their web portals vying for media space and audience engagement; at the same time, there are various alternative media with opposing voices and voices that redefine meanings of various issues.

India's Experience with the Internet In the form of digital media, social media is becoming a more prominent player who is redefining even news and journalism. There are ways in which social media is allowing democracy to reshape the future and assist citizens in being a more active part of it. The recent case of mob lynching incidents on social media in Indian cities is an example to show how there is a close relationship between social media and democracy. Such media becomes a mediated platform for struggles, crimes, movements, protests, and dialogue by various groups, organisations, communities, and people that are marginalised. It is believed by some that despite such activity out there on the Internet, these struggles have less meaning for the ones who do not have access. Hence, digital media platforms generate debates around inclusion, access, privacy, openness, and diversity.

17.8 KEYWORDS

Alternative Media: Such forms of media that are not in the mainstream and are more participative and accommodative of audience voices and perceptions. It provides a sense of 'empowerment' and 'identity'.

Mainstream Media: It is also used interchangeably with the word corporate media, which means news that is being produced with a profit motive.

Media Reform: This essentially means the change in policies and agendas of media in a way that it is more catered to public needs and away from corporate or other bias.

Net neutrality: It means internet service should be provided equally to all for use instead of differentiating or discriminating between users.

Open Source Software: It is a type of computer software in which the copyright holder grants it for use and distributes the software to anyone for any purpose.

Tactical Media: It is a peculiar term that implies expressions of dissent through artistic and do-it-yourself approaches which are readily available, including cheap technology.

Web 2.0: This term usually means user-generated content, participatory culture and interoperability of media (mainly blogging, wikis and syndication).

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17.10 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress: 1

1. The two main debates around new media and politics relate to:
 - a. Democracy and how a public sphere is created around it based on the theory propounded by Jurgen Habermas. He thought that public opinion should be a product of informed deliberation among citizens in a democracy.
 - b. Capitalism skewed towards politics and powered economic elites. It is indicated that the 'political economy' of the Internet puts pressures on users so that the social media platforms are used more by the powerful and financially strong rather than the marginalised.
2. Two main instances to indicate that social media is used for political purposes:
 - a. Leaked photos of Abu Ghraib prison where atrocities being carried out on the prisoners were shown to the whole world. It created a furore and changed public opinion against the US Army.
 - b. India Against Corruption Movement under the leadership of Anna Hazare was a significant turning point in the history of social movements in India where the social activist made undue pressure on the government for the Jan Lokpal Bill to be promulgated which would end corruption. He garnered substantial public opinion in his favour through social media platforms.

Check Your Progress: 2

1. Significant differences between mainstream and alternative media are:
 - a. Alternative media is more around connecting local cultures, news and information that pertains to a region; while mainstream deals even with a global news event or item.
 - b. There is more tolerance for individual freedom and social differences in alternative media while there is less censorship of ideas and speech. This is not so in mainstream media.
 - c. There is also among alternative media an eagerness to report on community issues and those areas that get neglected by mainstream media organisations.
2. The different genres of alternative media area
 - a. Culture jamming, which comes in the form of internet memes and marketing and is a commentary on popular culture, advertising and such art forms dealing with issues of consumerism and capitalism.
 - b. Participatory journalism, alternative computing, mediated

mobilisation and commons knowledge. After culture jamming comes Participatory journalism which refers to radical news on web-based sources which are mainly critiques on online news services and blogs.

- c. Alternative computing deals with the material infrastructure of information and communication technologies (hacking, open source software and file sharing are few examples)
- d. Mediated mobilisation refers to communication practices that ignite social movements or cultural projects; and
- e. Commons knowledge provides alternatives to top-down creation and dissemination of knowledge (Wikipedia being one such example).

Check Your Progress: 3

1. Some of the significant strengths and weaknesses of citizen journalism are:

Strengths:

- a. It bridges the gaps that exist within mainstream media where people can fact-check, augment or create media themselves.
- b. It empowers local communities.
- c. It generates more interactivity and better dialogue on a single platform.

Weaknesses:

- a. Credibility is a significant issue as audiences are left wondering what to believe.
 - b. Such works published have only limited audiences, such as friends on social media.
 - c. Even though the news is sometimes circulated here, it can generate false hype and encourage rumour-mongering.
2. Digital media is most definitely massively engaging the audiences as people are losing interest in mainstream media as it is functioning under various pressures of time, space and editorial leanings. Therefore, people are increasingly turning to digital media as a news source and for information. They think the news on some sites such as Indy media are more credible and they can become news producers as well.

UNIT 18 ICT AND KNOWLEDGE SOCIETY: CHALLENGES AND OPPORTUNITIES

Structure

- 18.0 Introduction
- 18.1 Learning Outcomes
- 18.2 Criticisms of Knowledge Society
- 18.3 A Critical Appraisal of Discourses on Web-based Knowledge Dispersal
- 18.4 The Digital Divide in Knowledge Society
- 18.5 The Digital Divide Among and Between the Global Countries
- 18.6 The Question of Literacy in Knowledge Society
- 18.7 Accessibility of ICT Infrastructure in Knowledge Society – the Internet
- 18.8 Divide in Employment Accessibility
- 18.9 Let Us Sum Up
- 18.10 References and Further Readings
- 18.11 Check Your Progress: Possible Answer

18.0 INTRODUCTION

The idea and concept of knowledge society got wide popularity towards the end of twentieth century. This concept has been widely contested too and has been questioned by various scholars from diverse corners. Social scientists have criticised it content, form and direction. Let us see some of the these criticisms in more detail here in this unit. The theoretical discourses that examines technology and human progress and the dimensions of knowledge and digital divide in knowledge societies are also discussed here.

18.1 LEARNING OUTCOMES

This unit enables you to critically analyse:

- the conceptual dilemma in defining knowledge society;
- theoretical discourses that examine technology and human progress;
- the empirical impediments in accepting knowledge society as a universal phenomenon; and
- the extend of knowledge/digital divide in the contemporary information age.

18.2 CRITICISMS OF KNOWLEDGE SOCIETY

All societies are knowledge societies and hence the argument that the present society is an emerging knowledge society is questioned.

- There still exist an ambiguity in defining knowledge society, which is evident from the interchanged use of knowledge and information society as well as knowledge economy.
- Ambiguity exists not only in defining knowledge society but also defining in the very concept of knowledge with relation to knowledge society.
- The very ambiguity in defining knowledge and knowledge society makes it difficult of measure knowledge society empirically.
- The difficulty in measuring the knowledge society makes it difficult to measure the extend of penetration of knowledge society into all spheres of society.
- Knowledge society is often referred to as like long learning society. But projects and plans by individuals and groups and institutions to develop lifelong learning are more credibly regarded as a response to the requirement of the state in knowledge society rather than to an independent requirement of the knowledge society itself.
- Growth in higher education is taken into account in assessing the growth in knowledge society. The question is that whether the higher education ensures a the emergencie of an egalitarian society. Or does the knowledge society ensure equal to higher education to all seations of the population can knowledge society ensure an equal standard for higher education.
- Studies on knowledge society indicate a growing “digital divide” (we will learn more about this in the later part of the unit) within and across the communities. It looks as if the pre-existing inequalities in the society are only reinforced in knowledge societies.
- It in often chained that knowledge societies would bring progressive transformations in the society. However, innumerous examples of system crash, deskilling, ever insufficient up skilling, redundant mountains of hardware, incessant innovation, enforced creativity, workplace and lifestyle stress etc., also represent a substantial matter of “knowledge failure” or “systemic waste”. One should not take sight away from such realitics of knowledge society.
- The different theoretical strands related to Internet based knowledge transmission have their own critical approach about knowledge society (we will learn more about this in the succeeding section).
- Some of the knowledge society imperatives such as international economy, fully modenised state, the future of work and well being all seems to be thrust upon the people leaving no scope for the people to make their own choice for accepting or rejecting the system.
- It is also argued that the social fatalism has reached such a height that the latest technological determinism strips the collective and individual intelligence or knowledge of people of its most precious characteristics, namely the ability to critically question and to devise alternatives to what must inevitably be.

Now in the following section let us critically evaluate the theoretical discourses on knowledge transmission in knowledge societies.

Activity – 1

You must have been experiencing the proliferation of various elements of the knowledge society both in your individual and collective social existence. Based on your regular experience write a critique of knowledge society.

18.3 A CRITICAL APPRAISAL OF DISCOURSES ON WEB-BASED KNOWLEDGE DISPERSAL

There are different discourses that relate knowledge and power in a knowledge-based society. Foucault (1977), who demonstrated how knowledge and power are related, argues whenever someone transmits knowledge it involves power. Whenever power is exerted, knowledge is involved. The four discourses related to Internet based knowledge transmission, which forms significant basis of knowledge-based society are techno-utopianism, techno-cynicism, techno-zealotry and techno-structuralism (<http://cade.icaap.org>). In this section let us look briefly the counters of these theoretical discourses. The concentration or dispersal of knowledge power through the medium of Internet and World Wide Web is the main question in all these four discourses.

Techno-Utopianism

Techno-utopians are optimists who believe the Web leads to greater access to education and there by greater dispersal of knowledge. This facilitates the universal accessibility of knowledge and this may lead to empowerment of larger section of the population because in knowledge-based society the acquisition of knowledge empowers the individuals. In this discourse, they argue, the Web i) lowers barriers that impede access to education in face-to-face settings, ii) will eventually result in equity, iii) reaches the hard-to-reach iv) straddles cultural boundaries v) constitutes a “paradigm shift” in learning and education vi) fosters high degrees of interaction vii) leads to a reinstallation of fading local democracies viii) invites learner participation ix) encourages a desirable level of collaborative (rather than individual) learning, teamwork and cooperation.

Techno-utopians are often have a global vision about the ICT infrastructure and ICT penetration without taking into account local particularities. They predict a universal dispersal of knowledge through Internet and World Wide Web without taking into consideration of the fact that a vast majority of the world population are in the developing countries where the first priority of the people even in this 21st century is the basic amenities of life not ICT infrastructure. Techno-utopians version of “information highway” - a utopian narrative which argue that progress and salvation through technology and transportation - makes little sense in most part of the world even today. If the techno-utopians fail to view technological advancements in the societal

contexts of inequality, illiteracy, poverty, ill health and other forms of social backwardness that persist in many parts of the globe, the paradigm shift that they claim that they claim the technological will bring about may instead lead to a “paradigm lost” (Singha Roy 2002).

Techno-Cynicism

Techno-cynics have a critical view about the role of Internet and Web in the dispersal of knowledge. They do not believe that the Web is a wired utopia for learning and education. Instead, they argue, it will lead to a concentration of power. Techno-cynics are realists, distrust corporatism and the commodification of education and regard globalisation as a code for Americanisation. They argue the Web i) will not significantly enhance access to education, ii) will not yield equity iii) will aggravate the gap between the ‘have’s’ and ‘have-nots’, iv) will converge around the orthodoxy of Americana (Boshier, Wilson and Qayyum 1999), v) will help foist free-trade on the world and thus lower occupational, health and environmental regulations, vi) enable global enterprises to monitor markets and make instantaneous adjustments with the click of a mouse and thus reinstall exploitative colonialism.

Techno-cynics were largely critical of techno-utopian ideas. They argue that technology itself is not bad. The problem is in the way it constructs relationships. They believe being too connected (online) may deprive people of humanity. Interactions through Net give people a chance to ignore the human side of such relationships. A disturbing part of the techno-cynic position is enunciated by Mander (1996) who argues that economic globalisation involves the most “fundamental re-design” of socio-political and economic arrangements since the industrial revolution. Advocates and beneficiaries of the new order (free trade, deregulation, restructuring) use computers, not to empower communities, as techno-utopians would claim, but as a tool of financial exploitation. “Computer technology may actually be the most centralising technology ever invented, at least in terms of economic and political power. This much is certain. The global corporation of today could not exist without computers. The technology makes globalisation possible by conferring a degree of control beyond anything ever seen before” (p.12). In the old days this kind of globalisation was called colonisation.

Techno cynics disagree with the techno utopians on many grounds. They agree that the virtual universities – a major mode for the dispersal of knowledge in knowledge societies according to the utopians – in effect will function as a digital diploma mills. Noble (1997) is a leading North American exponent of techno cynicism claims online courses will lead to commercialisation of higher education, the loss of faculty independence, a secondrate “shadow cyber- education” and virtual universities with perhaps no faculty whatsoever.

Another manifestation of techno-cynicism arises from the Web’s inclination to promote a conservative view of education. They argue that there is much more to education than filling empty vessels or producing “stuffed docks.” The problem with Web learning, according to them, is with the fact the Web and too many other distance technologies deliver information without raising

appropriate questions or to make a critical evaluation of the information transferred. The Web causes people to think of education as an information transfer process. “We are building an educational system on the assumption that our minds are a lot of hard drives that can simply be filled up with data” (Ott 1998).

Techno-Zealotry

For Techno-zealots power relations of technology and knowledge are irrelevant because technology has inherent value irrespective of how it used. In significant ways, technology is neutral. Techno-zealots are typically consultants or academics with few theoretical pretensions and a vested interest in cultivating corporate interests or others who control research and development grants. Techno-zealots typically use a PowerPoint presentation (which greatly minimises the likelihood of critique) to enthuse about “convergences,” “paradigm shifts” and the galaxy of wonders lying at the intersection of telecommunications and computers (<http://cade.icaap.org>).

In the techno-zealotry discourse i) deploying the Web is a “rational-technical” process that knows no bounds. It’s just a “technical” problem, ii) statements about the benefits of the Web are couched as grand generalisations which have little regard to discrepancies between rich and poor, developed and developing countries or the learning proclivities of different people iii) technology and the Web are worth pursuing for their own sake - irrespective of the context or what they might mean for the human condition, iv) the Web is a technology bristling with potential for profit.

The views of techno-zealots are significantly detached from material realities including rural landscapes, where information technology is nowhere to be seen. They argue that information technology can overpower “cultural barriers, economic inequalities (and) compensate for intellectual disparities. High technology can put unequal human beings on an equal footing and that makes it the most potent democratising tool ever devised” (Pitroda 1993). But the critiques view that in a situation where the number of people without phones is growing faster than the number of people with them, the prospect of bandwidth intensive Web applications seems downright criminal (Leonard 1998).

Techno-Structuralism

Techno-structuralists are not interested in whether technology is good, bad or neutral. They are mostly interested in institutional forces or the social context wherein the Web is used. In the techno-structuralism discourse there are questions about: i) who is using the Web, who is doing what to whom and for what reason? ii) the extent to which the Web is “World Wide” or largely carrying an American message iii) the extent the Web will invigorate or enfeeble democratic structures and processes iv) will it reinforce or challenge the interests of corporate, political and military elites? v) will it lead to a celebration of “information highway” (an utopian concept) vi) the nature of power relations nested in Web learning and education? vii) how the Web suits the modus operandi or learning proclivities of different groups (such as indigenous people, women, rural folk).

The centrepiece of this discourse is the way technology is used. As Galtung (1979) noted “A naive view of technology sees it merely as a question of tools hardware - skills and knowledge and software. These components are certainly important, but they are the surface of technology, like the visible tip of the iceberg. Technology also includes an associated structure, even a deep structure, a mental framework, a social cosmology, serving as the fertile soil in which the seeds of a certain type of knowledge may be planted and grow and generate new knowledge ... Tools do not operate in a vacuum; they are man-made and man-used and require certain social arrangements”.

According to the techno structuralists although the Web can facilitate vertical and horizontal communication, more information does not, by itself, lead to desired action. It’s a question of who is doing what to whom and why? Other questions informed by a techno-structuralist discourse concern who uses the Web.

After having a look at the theoretical critiquing of knowledge societies, let us turn to the one of the often discussed aspect of empirical critiquing of knowledge society the digital/knowledge divide.

Activity – 2

What are the differences that you can find between techno-utopians and techno- structuralists?

Check Your Progress: 1

- Note:** 1) Use the space below for your answers.
2) Compare your answers with those given at the end of this Unit.

1. List any five criticism of knowledge society?

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2. Write differences between techno-utopianism and techno-cynicism

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3. What is techno-Structuralism?

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18.4 THE DIGITAL DIVIDE IN KNOWLEDGE SOCIETY

We have already seen that the free flow of information and ideas has sparked an explosive growth of knowledge and its myriad new applications in the information age. We also noticed that information, its access, dissemination and control, is at the core of this revolutionary phase of human development and as a result, economic and social structures and relations are being transformed in the contemporary phase of human development. Yet the vast majority of people in the world remain untouched by these revolutionary developments in information and communication technologies and explosive growth of knowledge. Although this transformation to information age and knowledge society offers many potential benefits to developing and transition countries, increasing reliance on digital information and advanced communication technologies carries, at the same time, the real danger of a growing digital divide/gap among and within nations.

Digital or knowledge divide refer to the gap between the technology-empowered and the technology-excluded communities in the world around; as well as to the lack of information transfers in and between these communities. The developing world and transition economies comprise the largest portion of the digital and knowledge divides. While global teledensity shows signs of improving the gap between those with and without access to the Internet continues to increase throughout the world. The 'digital divide' has created a knowledge gap between information rich and information poor peoples, which has the potential to give rise to a new form of 'illiteracy.' The 'digital divide' promotes information and knowledge poverty and limits the opportunities for economic growth and wealth distribution. ICTs spur the creation of economic and social 'networks' of individuals and communities. The power of these networks is their ability to connect diverse groups by allowing them to access and exchange information and knowledge that is crucial for their socio-economic development. Traders and entrepreneurs benefit from ICTs through the opportunities created by promoting their businesses nationally, regionally and globally. As well, ICT offers the possibility of delivering basic health and education services more efficiently because people can have access to them from their own communities. Unfortunately the accessibility to ICT to the larger population is very limited and hence their chances for taking advantage of these technological developments is very limited creating a division among people.

Our increased ability to communicate and share information and knowledge increases the possibility for a more peaceful and prosperous world for all of its inhabitants. However, the majority of the world's people will not be able to benefit from this information revolution unless they are enabled to participate fully in the emerging knowledge-based society. In an universal knowledge society knowledge and information should be easily accessible to all, including those living in rural areas and the disabled. Special attention must be paid to the marginalised, unemployed, underprivileged, disenfranchised peoples, children, the elderly, the disabled, indigenous peoples and those with special needs. The universal human values of

equality, and justice, democracy, solidarity, mutual tolerance, human dignity, economic progress, protection of the environment, and respect for diversity are the foundations for a truly inclusive global information society. Now let us examine in the succeeding sections the digital or knowledge divide in relation to skill and infrastructure for knowledge generation and dissemination and employment structure in knowledge societies.

18.5 THE DIGITAL DIVIDE AMONG AND BETWEEN THE GLOBAL COUNTRIES

The ‘digital divide’ threatens to widen the already existing development gap between the rich and the poor among and within countries. The majority of the world’s people will not be able to benefit from this revolution unless they are enabled to participate fully in the emerging knowledge-based information society. Internal divide is between digitally empowered rich and the disempowered poor; linguistic cultural divide between domination of Anglo-Saxon and the other world culture; divide in access of technology between the rich and the poor nation; and the divide between the values of ICTs driven affluent elite and conventional authority and hierarchies (Keniston 2003). Disparities in per capita income and standards of living could translate into the marginalisation of entire societies or segments of society. Also within countries, technological change often means that groups, which were already disadvantaged or excluded — low-income families, rural populations, women, minorities, and the elderly — fall farther behind.

Notwithstanding this divide many experts are of the opinion that the countries that do not adopt and adapt to the current technological changes will be marginalized widening further digital divide within and between the countries.

Activity – 3

What do you understand by digital divide? Examine the dimensions of digital divide that exist in our country.

18.6 THE QUESTION OF LITERACY IN KNOWLEDGE SOCIETY

In the information societies knowledge is the power. But this knowledge power will become reality only if one has accessibility to knowledge.

The appearance and the rapid evolution of ICT have created at least two major challenges for education: to achieve the appropriate integration of ICT into overall education systems and institutions, and to ensure that the new technologies become agents of expanded access and equity and increase educational opportunities for all, not just for the wealthy or the technologically privileged. Indeed, early policy research in the United States, one of the first widespread adopters of new ICT, found strong evidence that uneven access to the technologies was worsening existing equity gaps in

education. Explicit attention needs to be given to equity considerations so that the new technologies, which “shatter geographical barriers (may do so without) erecting new ones and worsening the digital divide” (Gladieux and Swail 1999: 17).

There is another potential threat for education in knowledge societies. It is now established that the knowledge economy needs an educational arrangement to promote extensive use of ICTs, educational programmes that can be traded across the border as commodity and lifelong learning for the workforce. Several noted experts on distance education however, have viewed ICTs as a vehicle for commercialisation education globally. To David F. Noble (1997) against the backdrop of phenomenal expansion of ICTs educational campuses are now being identified as a significant site of capital accumulation by converting intellectual activity into intellectual capital. To him this processes has penetrated with the process of commoditisation of the research function and of the educational function of the university, transformation courses into courseware, learning instruction itself into commercially viable products that can be owned, bought and sold in the market. Against the backdrop of the exponential emergence of knowledge economy he highlights that the corporate and political leaders of the major industrialised countries in order to retain their economic supremacy now turn towards the “knowledge-based” industries.

To him, as impacts of commoditisation of university function, teachers as labour are made subject to all the pressures of undergoing rapid technological transformation from above. They have also reduced their autonomy, independence, and control over their work. Now universities are transformed into market for the commodities being produced, whereby faculty who conducted research in the role as educators and scholars, has become instead producers of commodities for their employer. ‘Much to suffice the commercial end there has emerged close partnership between universities and industries to convert the instructional process into marketable products, such as a CD ROMs, Websites, or courseware which they themselves may or may not “deliver” (Noble 1997).

Latchem, C. and Hanna, D.E. (2002) find that in general the ‘higher education is experiencing a shift from supply driven to a demand driven pressures due to impact of globalisation and information and communication technology (ICT), competition from new providers, and the need to be self sustaining. Universities are increasingly seeking solutions to these challenges in the open and the flexible and ICT based online or virtual learning, and the ODL system also getting transformed from quality driven and marginal to commercially-oriented and mainstream.

18.7 ACCESSIBILITY OF ICT INFRASTRUCTURE IN KNOWLEDGE SOCIETY – THE INTERNET

In the previous unit on Knowledge Society we have seen how the ICT infrastructure of tele and Internet based information dissemination

technologies act as the backbone of knowledge societies. In this information age Internet is the largest self-governing organisation, all pervasive. Even those opposed to globalisation depend on it to exchange ideas and mobilise support. While the Internet facilitates exchange of ideas, access to knowledge, communication between diverse people etc., it also alters the structure of knowledge and proves advantageous to those who have better access to it. The info-technological revolution is restructuring the global social economic equations shifting from income divide to knowledge divide. But how can Internet and corollary technologies contribute to the building of knowledge societies without universal access to education and information? How can people benefit from the Internet if they lack access or if they are in constant fear of persecution?

In the so-called knowledge societies, millions of people in the developing countries are excluded from the wide range of information and knowledge. The poor in the developing countries remain much isolated economically, socially and culturally from the burgeoning information and progress in arts, science and technology. Little is known about the barriers to evolution and growth of knowledge societies in developing countries in spite of advancements in the use of information and communication technologies.

Real disparities exist in access to and use of information and communications technology (ICT) between countries (the “international digital divide”) and between groups within countries (the “domestic digital divide”). There is a wealth of real and anecdotal evidence to support this statement. The volume of statistics is impressive and persuasive:

There is an overall trend of growing ICT disparities between and within countries:

- All countries, even the poorest, are increasing their access to and use of ICT. But the “information have” countries are increasing their access and use at such an exponential rate that, in effect, the divide between countries is actually growing.
- Within countries, all groups, even the poorest, are also increasing their access to and use of ICT. But within countries the “information haves” are increasing access and use at such an exponential rate that, in effect, the division within countries is also actually growing.

Two basic disparities exist in the affordability of ICTs – in the basic cost of the technology, and in the cost of the technology relative to per capita income. Access costs are almost four times as expensive in the Czech Republic and Hungary as in the United States (during off hours; peak prices are even higher) (OECD 2001). Outside a few select countries, only wealthy individuals and sections of the middle class can currently afford access. The majority of people in developing countries cannot afford the technology, even when it is available, so usage remains low: “Poverty remains the greatest barrier to Internet growth in Africa. The monthly connection cost for the Internet in Africa exceeds the monthly income of a significant portion of the population (Ibid).

Now if we turn to domestic scene we can see that ICTs however, function in societal context. Most reports on disparities in ICT access within countries look at the problem according to socio-economic criteria such as race, income, geographical location, education age, gender etc. if we take the case of India, we can see that globalisation and information age have led to a diverse social formation in India within and between societies. A large section has remained outsiders from within, being subordinated and excluded from the dominant processes of globalisation and knowledge economy. Indian societal context is ridden with unequal distribution of resources, and divides based on caste, class, ethnicity and gender. Illiteracy, low income and spatial isolation widely contribute to sustain the pre-existing social exclusion. Along the time, there are also the dimensions of digital divides of various sorts. These divides are between rich and poor, between urban and rural, between English speaking upwardly mobile literati and non-English speaking rest of people. This digital divides are again accentuated with the varied extent of access of electricity, telephone and computer in different states in India (See table 7). In the globalised world while these has emerged areas of inclusion; there also exists a vast section as excluded from within. While most of the urban areas have been connected with the forces of globalisation and ICT networks and a distinctive category of elites have emerged therein as the ICT driven 'digiterati' within the same urban set a large segment of the work force working mostly in the unorganised sector and surviving in a sub-human existence has remained excluded from the ICTs access. The rural areas on the other hand while the rudimentary forms of connectivity have only touched the upwardly mobile gentry; the agricultural labourers, tenants, poor peasants and the artisans who represent the vast section of the marginalised people of India has also remained excluded. Their educational and economic status often bar them from getting integrated with the information age.

The linguistic diversity and cultural identity

Here we may analyse the impact of certain incidents of the information society on social and cultural development. Culture is at the heart of contemporary debates about identity, social cohesion, and the development of a knowledge- based economy. The promotion of linguistic diversity on global information networks, the production of local and indigenous content on the Internet and universal access to cyberspace are central issues. Language is one of the major barriers to the formation of perfect knowledge societies in developing countries. Each day over two million pages are added on the Internet but there is a very small content representation on the net in the vernacular languages of the southern countries. Statistics point out that over 85% of the content on the net is in English; yet fewer than one in ten people worldwide speak that language. Further, with high rates of illiteracy in the developing countries, people who are unable to read the content even in local languages would be excluded from the knowledge-sharing network. Thus, the literally well connected have an overpowering advantage over the illiterate poor, whose voices and concern would be left out of the global conversation.

Activity – 4

Do you think the existence of multiple languages in India will hamper the growth of knowledge based society in India? Suggest some ways to overcome the situation.

Check Your Progress: 2

Note: 1) Use the space below for your answers.
2) Compare your answers with those given at the end of this Unit.

1. Enumerate the 'international digital divide' and 'domestic digital divide'?

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2. Describe the overall trend of growing ICT disparities?

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**18.8 DIVIDE IN EMPLOYMENT
ACCESSIBILITY**

In the contemporary phase of rapid globalisation and revolutionary changes in the technological developments there is a widening gap in terms of country's participation in global economy and the benefits that these countries, enterprises and individuals reap from this participation. Also within many countries the gap in terms of access to decent work and incomes and participation in economic and social life is widening between various income groups. The poorly educated and trained are generally the losers in the process of economic change where society as a whole seems to march towards higher order of development. This is what happens in knowledge societies. Those who have access to knowledge and related technologies can take advantage of emerging economy and thus the economic advantage. This true in the case of both the individuals and nations.

Globalisation, declining communication and transportation costs, and the opening of political borders combine to facilitate increased movements of skilled people (knowledge workers). This dynamic is de facto leading to a global market for advanced human capital in which individuals with higher education are the most likely to participate (Carrington and Detragiache

1999). This may lead to mobilisation of qualified people from lesser developed to the developed countries, thereby depriving the developing countries the service of their better minds.

In this 21st century marketplace, the richer countries strive to attract and retain the world's best-trained minds in many ways. Among the more powerful "pull" factors are effective policies that stimulate R&D activities and increase direct investment, offer attractive post-graduate training and research opportunities, and recruit younger graduates and professionals (Glanz 2001). OECD countries are increasing their investments in R&D not only in the science and technology sector but also in other knowledge-based sectors, thus creating job opportunities for well-trained people.

Advanced countries are opening recruitment offices in countries where, because of lack of opportunity and political instability, graduates are available. Australia, Canada, EU members, and others all compete for their share of well-trained people in the global marketplace. France and Germany have freed up the issuance of visas to attract foreign professionals in technology-related areas.

The global labor market for advanced human capital is an expanding reality that brings the circulation of skills and the related problem of "brain drain" to the forefront of national concern, particularly in developing countries. Whether it results from push or pull factors, brain drain can have a debilitating effect on national governing structures, management capacities, productive sectors, and tertiary institutions. It is estimated, for example, that at least 40 percent of the graduates of the highly regarded Indian Institutes of Technology seek employment abroad. Although the phenomenon of brain drain – international mobility of skilled human resources – existed in the past too, this received an increased acceleration in the contemporary phase of technological development when knowledge and knowledge workers become commodities of high value. The rising process of brain drain can have positive as well as negative effects on countries at all levels of development. Developing countries, however, tend to suffer largely adverse consequences, as they may lose the very technical and professional specialists who would be capable of contributing to poverty-alleviating improvements in the living conditions of the local population.

18.9 LET US SUM UP

This unit makes an attempt to make a sociological critiquing of the phenomenon of knowledge society at all the three levels of conceptual, empirical and theoretical. In conceptual critiquing the very concept of knowledge-based society is questioned since all the human societies are knowledge societies. Also the ambiguity in defining the concept of knowledge is widely criticised.

On theoretical grounds there are different ideological strands that relate technology and human progress. While techno utopians consider technology all pervasive and it leads to universal human progress, techno cynics consider technology as facilitating the existing societal divisions and inequalities. Whereas, techno structuralists are not concerned with the merits of

technology but the way technology is used. They believe that if technology is used with a deliberate determination of reducing the existing disparities in development, it will be beneficial to the humanity as a whole. In empirical critiquing the unit is more focused on digital/knowledge divide. The wide gap in the mass participation in the process of knowledge production, dissemination and deployment in a knowledge-based society has been highlighted in this unit. We have seen wide disparities in ICT accessibility exist between the countries on the basis of GDP rates and within the countries based on socio-economic criteria such as geographical location, race, income, education etc.

From the fore-going discussions we understand that the challenge before the knowledge-based society is whether such a society, the basis of which is the universal phenomena of knowledge and its production, dissemination and application actually will be able to achieve the universal concepts of equity and equality to all.

18.10 REFERENCES AND FURTHER READINGS

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18.11 CHECK YOUR PROGRESS: POSSIBLE ANSWER

Check Your Progress: 1

1. Ambiguity in defining knowledge society; the concept of knowledge is yet to get clear definition; ambiguity in defining knowledge and knowledge society makes it difficult to measure knowledge society empirically; the pre-existing inequalities in the society are only reinforced in knowledge societies, and different theoretical approaches are critical towards a knowledge society.
2. Techno-utopians are optimists who believe the Web leads to greater access to education and thereby greater dispersal of knowledge. Techno-utopians often had a global vision about the ICT infrastructure and ICT penetration without considering local particularities. Conversely, technocynics have a critical view of the role of the Internet and Web in the dispersal of knowledge. They do not believe that the Web is a wired utopia for learning and education. Instead, they argue that it will lead to a

concentration of power. They argue that technology itself is not bad, but the problem is in the way it constructs relationships.

3. Techno-structuralists are not interested in whether technology is good, bad or neutral. They are mostly interested in institutional forces or the social context wherein the Web is used. The centrepiece of this discourse is the way technology is used.

Check Your Progress: 2

1. The majority of the world's people will not be able to benefit from this revolution unless they are enabled to participate fully in the emerging knowledge-based information society. The internal divide is between digitally empowered rich and the disempowered poor; linguistic-cultural divide between the domination of Anglo-Saxon and the other world culture; divide in access of technology between the rich and the poor nation. The real disparities exist in access to and use of information and communication technologies between countries and between groups within countries.
2. All countries are increasing their access to and use of ICT. But the information have countries are increasing their access and use at such an exponential rate that, in effect, the divide between countries is actually growing. Within countries, all groups, even the poorest, are also increasing their access to and use of ICT. But within countries, the information haves is increasing access and use at such an exponential rate that the division within countries is also actually growing.