



Indira Gandhi National Open University
School of Journalism and New Media Studies

MNM-014 Contemporary Scenario of Digital Media



“शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्र की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्तमान विषमताओं को दूर करते हुए मनुष्य को इन सबसे ऊपर उठाती है।”

— इन्दिरा गांधी



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“Education is a liberating force, and in our age it is also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances.”

— Indira Gandhi



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School of Journalism and New Media Studies

MNM – 014
Contemporary Scenario
of Digital Media

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COURSE INTRODUCTION: CONTEMPORARY SCENARIO OF DIGITAL MEDIA

In continuation to Understanding Digital Media (MNM011), in this course - Contemporary Issues of Digital Media (MNM014), we will discuss and learn about the issues of this interactive medium. By virtue of networked platforms, digital media transcends national boundaries and reaches many heterogeneous individuals and communities. Conflicting governance systems, an array of social and cultural diversity makes the online and digital platform a fascinating communication field to explore. The nature of the medium suits aptly for many beneficial actions, and the medium's potential can break the existing class ceiling. It could make the individuals and communities assert their rights, demand their freedom, and help them connect and maintain cultural affinities.

At the same time, the speed at which the technological features are integrated with the digital medium gives hopes for providing a socialistic culture. The platform should be safe and secure for all stakeholders to reap the beneficial aspects of digital space. Mounting adequate surveillance and making required security infrastructure are paramount necessities for contemporary digital media based on all kinds of transactions.

Understanding the requirements of safe and secure digital platforms to facilitate all the societal benefits is this course's primary focus - Contemporary Issues of Digital Media. The course is divided into three blocks with 14 units - all of them focuses on three major focal points of this course: Internet & Social Scenario, Internet Governance and Regulating Internet.

Block 1 Internet & Social Scenario address the social dimensions of contemporary issues. Unit 1 explores the emergence of digital media from utilising the medium for effective communication interventions. Unit 2 discusses the potential of Information and Communication Technology for nation-building, notably, digital media-based service sectors' economic and social contributions. Unit 3 describes the relationship between the Internet and human rights avenues, as the online platform reaches the nook and corner of the global platform. Unit 4 explain the issues of access from the gender perspectives. Unit 5 explores the role of digital platforms in connecting the diasporic communities with their cultural affinities. Unit 6 explains the potential utilisation aspects of ICT for People with Disabilities.

Block 2 Internet Governance explores the challenges of technological development in facilitating a secure platform for all the stakeholders. Unit 7 discusses the merging and combination of various tools and techniques to maximise the utilities of ICT. Unit 8 explores alternative software movements and copyleft challenges to proprietary software giants and open-source online services. Unit 9 address the various initiatives and institutions from national and international levels involved in securing the online platforms. Unit 10 describes the requirements of maintaining a self-regulatory mechanism for the people engaged in the digital platform, as the medium amplifies misinformation and disinformation.

Block 3 Regulating Internet focuses on various legal efforts and remedies for cyberspace. Unit 11 describes the technological characteristics of

cyberspace and its need to make it more secure for making it a significant contributor to humankind. Unit 12 explains the various criminal activities in cyberspace and their unique characteristics. Unit 13 discusses the national and international efforts from the constitutional levels to regulate the Internet. Unit 14 explains India's Information Technology Act and its main features.

Through this course, you will learn the ongoing tussle between many players in the online platform and its social consequences. Internet mainly deals with individuals, and being a user and student of digital media, this course will facilitate expanding your understanding of this online medium.



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Block

1

INTERNET & SOCIAL SCENARIO

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Information Society 22

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BLOCK INTRODUCTION: INTERNET & SOCIAL SCENARIO

The first Block of MNM014. It comprises six units that introduce the social dimensions of various digital media issues - human rights, disability, gender perspectives, diaspora communities, and information society. These issues are explained from the Indian perspective with adequate examples and data.

Unit 1: Emergence of Digital Media begins with defining digital media and brings out the difference between digital, online and new media. The Unit focuses on the characteristics of digital media, its historical perspective and the digital media landscape in India.

Unit 2: Information Society deals with the emerging knowledge society's meaning, features, and basis. One of the basic features of the current pace of globalisation is its primary importance of ICTs, and the emergence of ICT led knowledge society. Here, knowledge becomes a commodity, and it becomes essential to possess the knowledge to achieve success in life and accumulate wealth.

Unit 3: Emerging Trends - Media, Internet, Globalisation explores the role of Information and Communication Technology-based media systems in the post-Cold-era period, the requirements of digital literacy for the ordinary people to be part of the technology-enabled platform and how international human rights movements utilise the ICT platforms for their mobilisation efforts.

Unit 4: ICTs and Women (Issues of Access and Equity) discuss the implications of gender disparity in access to ICT resources and the digital inequality that exists between various gender, particular references to women. Equally this Unit, explores the potential benefits of ICT for women, and incidentally, Sustainable Development Goal 5 focuses on women empowerment through ICT.

Unit 5: Indian Diaspora in Cyberspace describes the historical perspectives of the relationship between cyberspace and the Indian diaspora community. The Unit deals with the socio-cultural and economic issues at the virtual and real diaspora online.

Unit 6: ICT for Disability deals with the technological intervention to empower People with Disabilities to overcome their barriers to reap various services benefits. In this Unit, two major components are discussed - suitability of ICT for PwD and intervention efforts for PwD. Under the suitability aspects, the Unit describes the benefits and emerging trends of ICT for disability. Concerning intervention efforts, it discusses the measures taken by the institutional initiatives and individual actions.

Through this Block, you should be able to understand the beneficial social dimensions of Information and Communication Technology and the challenges that exist in the contemporary scenario.

UNIT 1: EMERGENCE OF DIGITAL MEDIA

Structure

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 - 1.2.1 Understanding Digital, Online, New Media, WWW
- 1.3 Characteristics of Digital Media
 - 1.3.1 Interactivity
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 - 1.3.3 Immediacy
 - 1.3.4 Archiving
 - 1.3.1 Linkages
- 1.4 Digital Media in India
 - 1.4.1 Digital landscape
 - 1.4.2 Digital Media: Historical Perspective
 - 1.4.3 The Impact of Digital Media on Traditional Media
- 1.5 Digital Media and Journalism: Emerging Trends
 - 1.5.1 Data-Driven Journalism
 - 1.5.2 Digital stories
 - 1.5.3 Mapping in Journalism
- 1.6 Challenges
 - 1.6.1 Fake Information
 - 1.6.2 Online Abuse and Threats; Trolling
- 1.7 Let Us Sum Up
- 1.8 Further Readings
- 1.9 Check Your Progress: Possible Answers

1.0 INTRODUCTION

From reading the newspaper to watching television, from listening to the radio and watching films, each and every media consumption experience has been affected by the emergence of Digital media. Newspapers are being read on laptops, tablets and smartphones. Even while reading the print version, there is always a temptation to go online to watch a video using a certain app. Online medium world over is giving a tough competition to Print and TV. Many people are consuming media messages not from the established television channel but by subscribing to YouTubers. Radio sets are often seen in households unused as people are tuned into their favourite channels through smartphones. The medium has not only affected the consumption pattern but has also affected the way media messages are produced. New technologies have impacted every function in a media house. Old ways of

working on certain products have been replaced by a new way of packaging information influenced by the emergence of technologies.

In this unit, we shall discuss the emergence of digital media, the digital media landscape, the opportunities and challenges of digital media, and its impact on traditional media. Different terms are being used interchangeably for Digital Media like online media, new media, ICT etc. we will discuss all these terms for your conceptual understanding.

1.1 LEARNING OUTCOMES

After going through this unit, you will be able to:

- describe what digital media is and how it has impacted the media landscape;
- articulate the effect of digital media on legacy media and how legacy media has adapted to the recent technological advancements;
- analyse the challenges posed by the digital media; and
- explore and use digital tools for constructing media messages.

1.2 DEFINING DIGITAL MEDIA

Every industry is relooking and reinventing various processes like production, resource management, marketing and is aligning them to the rules of the digital world. Media Industry, too has undergone a sea change through the digital transformation process. In recent years, every function of a media organisation has been affected by new technologies. While some media houses were very prompt and active in embracing these changes, others lagged. Laggards, though, could not resist the change for long and had to hop to the digital bandwagon to survive in the industry. Slowly they too embraced technology's meaningful role in the digital world.

1.2.1 Understanding Digital, Online, New Media

In media, a number of terms are used interchangeably, like New Media, Information and Communication Technologies, Digital Media, Online media, Multimedia, Convergence media, etc. There are some overlaps, but the meaning varies with the context. Let us explore the meaning of these terms:

- **Information and Communication Technologies:** According to the World Bank, ICT consists of hardware, software, networks, and media for collection, storage, processing, transmission, and presentation of information (voice, data, text, images)
- **Digital Media:** The digital process breaks down all information (data, text graphics, audio, pictures or video) into a sequence of numbers (digits), transports it by wire, cable or broadcast frequency to a destination and then re-assembles it back into its original form. Digital media refers to audio, video, and photo content that has been encoded (digitally compressed). Encoding content involves converting audio and video input into a digital media file such as a Windows Media file. After digital media is encoded, it can be easily manipulated, distributed, and rendered (played) by computers and is

easily transmitted over computer networks. Examples of digital media types include Windows Media Audio (WMA), Windows Media Video (WMV), MP3, JPEG, and AVI.

- **New Media:** New Media refers to those digital Media that are interactive, incorporate two-way communication and involve some form of computing as opposed to ‘old media’ such as telephone, radio and TV, according to Robert Logan (2010).
- **Online Media:** This is a generic term often used loosely to describe digital information access, retrieval or dissemination. This means accessing the information on the Internet via modem or telephone line.
- **Multimedia:** This means using more than one media technique (text, audio, still images, moving images) to tell a story. A multimedia news story then is any piece that uses two or more media to tell it.

The terms mentioned above are deeply linked and thus difficult to distinguish.

The significance of limiting this definition is largely contextual. While Information and Communication Technology encompasses everything from hardware to software and includes dissemination of information, the focus is on what makes any information digital in the Digital Media definition. In New Media, stress is on how the digital media is being used with interaction and two-way communication as its important feature. Multimedia, however, is the combination of two or more media techniques which is easily possible only when the information is available in digital format. While there is an overlapping basis for these, each of these terms has some distinct feature. For this chapter, the term Digital Media will include online platforms, social media, new digital tools, and the new ways of packaging and disseminating information, all in the context of the media industry.

1.3 CHARACTERISTICS OF DIGITAL MEDIA

There has been a massive growth in the popularity of the digital media world over in the last decade. Digital media is seen as a threat to legacy media. Wherever there is a decline in newspapers’ readership, Digital has been quoted as one of the major reasons. Whether digital is responsible for the decline in the growth of legacy media will be explored in the subsections later in this unit. In this section, the focus will be on the characteristics that made digital media a popular platform.

1.3.1 Interactivity

The most important characteristic that distinguishes Digital Media from traditional media is ‘interactivity’. It allows people to rate, share, like and comment on any message. There is a shift from the limited interactivity that traditional media offered earlier in letters to the editor or the feedback programmes on TV and radio to the unlimited interactivity that digital media offers. This interactivity allows people to respond or react to the messages constructed by the media houses. Still, it also turns consumers into producers, wherein people are not just consuming media messages but also constructing media messages. This feature has turned passive consumers into active producers. Most news portals nowadays offer opportunities to

the users to interact with the content (in the case of interactive stories), interact with the producers of the content, and provide space for user-generated content. Report for CNN is an example of how mainstream media encourages its audience to interact with the platform. Here, the interaction is not just writing comments or rating stories done by CNN. Still, iReport for CNN” is an interactive, international monthly half-hour TV program showcasing the most newsworthy and informative iReport contributions and citizen journalism reports on the Internet. Besides sending it to the platform, citizens can post it on Facebook, Instagram or Twitter with the hashtag #CNNiReport. Check the following website to know more:

<http://edition.cnn.com/CNN/Programs/ireport/>

Activity - 1

There are many examples of citizen journalism. Try to find out case studies where mainstream media welcomed contributions from citizen journalists.

1.3.2 Convergence

Digital Media makes the merging of various mass communication formats like print, television and radio. On the Internet, every medium resides next to another. You can listen to an audio interview, watch the event happening and read the story simultaneously. Journalists use one medium to tell one aspect of the story and another medium to tell another aspect. For example, a story on a satellite launch in India might use an explainer video to explain demonetisation, photographs to tell how it is being implemented, text to analyse the initiative and audio for interviews with the experts. You could combine these elements with telling a story on launching a satellite. This is also called *multimedia journalism*. In this case, each media element is an important part of the story. Multimedia reporting is usually confused with parallel reporting. Two or three journalists cover a story for print, video, or audio in parallel reporting. In such cases, these stories are independent of each other. As they are separate stories told by different journalists. Even if it is uploaded on the website, the only thing they have in common is the subject; otherwise, stories are different. In multimedia journalism, various media elements are weaved in the story according to the story’s requirements. Several digital tools can help journalists to write multimedia stories. Some examples of the multimedia story can be seen at the following link:

<https://infogr.am/examples>

1.3.3 Immediacy

Another important characteristic of Digital Media is immediacy. While in radio and television only one thing can be shown at one time and to show another the previous one has to be interrupted, on websites one can have multiple stories, and same can be updated as the developments on those events take place. A single story can post several updates on one story. By introducing live broadcasts, social networking sites have changed the game altogether. Traditional Media houses, as well as locals, can broadcast any event live. The broadcast feature, though, offers many opportunities with

just a Smartphone in hand and no other infrastructure. But at the same time use of this feature has drawn a lot of criticism.

Here is an example of Live Streaming of Iraqi and Kurdish forces advancing on Mosul. *“So what are we to make of Mosul, as Kurds and Iraqis advance on the city via 24/7 streaming on Facebook Live from Al-Jazeera, Channel 4 News and a Kurdish agency? Do we want an emoji on every blast of destruction? “Like”, “like”, “like” the carnage ... Is this some sort of macabre computer game?”* Peter Preston Columnist with Guardian about Channel 4 News’ Facebook Live broadcasts is a new trend and to add to this is the latest feature of 360 videos by the Live broadcast app like a periscope. So it is not just a live shot, but with 360 videos on Periscope, one can experience moments with the broadcaster and take a look around — it’s one step closer to being there.

Activity – 2

Explore Facebook Live or Periscope to broadcast local events in your area.

1.3.4 Archiving

Another characteristic differentiating digital from legacy media is its inherent capacity to archive news stories, videos, audio and infographics. The shelf life of news, which used to be very limited, has increased tremendously, with all sorts of content lying on different website shelves. One can visit that content anytime. The tags and keywords act as keys to those shelves. For example, you can access an article on global trade by typing a search query in the search box. If the article is given a tag like trade, Indian economy etc., it will be easy to retrieve it from the repository full of millions of articles. So it is important to have a well-archived website, but it should be well searchable. Archiving can also help writers provide important context to what they are presently writing and can be an excellent resource for research. For readers, it provides an opportunity for non-linear consumption of content. They can create their own stories by reading different pieces written by different writers and at different times.

1.3.1 Linkages

Archiving and information available on the web make linkages possible. It is easy to link the article to something written earlier on the same topic or with an article on the same subject written by a different writer. Linkages provide depth to the story. In Digital, for any story, the amount of space is limited, so is the case in print, TV and radio, where there is limited space and time. While in legacy media, the challenge is to tell the entire story in the limited time and space allocated to it, digital media overcomes this challenge by providing links to other relevant material. It could be an article on the same website or some report lying outside the website. While linkages broaden the scope of the story and anyone can explore multiple angles simultaneously, it also poses the challenge of losing a reader to some other website or content. It becomes very difficult to bring readers back to the site once they are navigating out of the website to look for other content. Therefore, it is important to use linkages strategically in any story.

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. Once digital media is encoded, it can be easily..... and by computers and is easily transmitted over computer networks.

2. for CNN is an example of how mainstream media encourages its audience to interact with the platform.

3. Write four characteristics of Digital media.
.....
.....

4. With Digital Media, there is a shift from limited interactivity to unlimited interactivity. Discuss.

.....
.....

1.4 DIGITAL MEDIA IN INDIA

1.4.1 Digital Landscape

India is going through a digital revolution. The amount of growth that India has seen in internet penetration is unprecedented. India has become the second-largest country globally in terms of internet users, with 462 million people connected with the Internet after China. The penetration is 34.8 %, according to <http://www.internetlivestats.com> (**Internet Live Stats** is part of the *Real-Time Statistics Project which provides live internet data*). The government's Digital India Programme (Digital India programme has been launched by the Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Government of India) has given a fillip to digital media in India. The Digital India campaign is centred around three visions:

- digital infrastructure as a core utility for every citizen
- governance and services on demand
- digital empowerment of citizens

All the digital initiatives to fulfil the visions mentioned above will contribute significantly to strengthening digital media in India. While it has already contributed to increasing the number of internet users in India, the implementation of Digital infrastructure as a core utility to every citizen will also increase the internet penetration, which is low compared to other countries. India has also seen tremendous growth in mobile use both for data and voice. Though it took two decades to reach a billion connections covering over 100 million unique subscribers, India has become one of the largest mobile markets in the world.

This trend encouraged people in the media industry to take Media Mobile Apps seriously. Several media houses have created their apps so that they can connect with those 100 million subscribers. Also, because of the

popularity of the platforms like WhatsApp and Facebook, there is a need to repurpose content for those who are consuming media messages using these platforms.

Media industry research has shown that media content creation, access and consumption have gone through enormous changes in the second decade of the 21st century, globally, and in India, and shifts would be more dramatic over the next five years by the end of 2020. Three main factors responsible for this trend are:

1. Technology and internet access, especially fast mobile data and broadband
2. Gadgets, especially smartphones and streaming media devices
3. The app ecosystem.

The growth in digital advertising has been the maximum over the last few years compared to other media segments. This massive growth is the increase in the internet user base, which includes mobile internet users.

1.4.2 Digital Media: Historical Perspective

Digital Media and Print Media

In India, The Hindu was the first newspaper to start its website in 1991. After that, most of the newspapers built their websites to connect with the people who had access to the Internet. In 2007, *Malayala Manorama* became the first regional newspaper to establish its presence in digital media by launching a mobile app. Newspapers like The Times of India, The Hindustan Times, The Hindu and The Indian Express joined Twitter in 2009-2010. In 2012, TOI forayed into augmented reality by launching its Alive App. The app allows users to scan any picture or graphic and then take them to the relevant multimedia content. In 2013 mobile media apps became very popular. One app that emerged as a leader was 'Inshorts'. The app was an instant success and was based on the premise that people would like to consume messages quickly. Hence, the news is constructed so that it delivers the entire story in a few words.

To make their content easily accessible through search engines, many media outlets forayed into Search Engine Optimisation and Digital marketing. Social media marketing became as important as content. Media houses trained their staff or hired digital marketing agencies just to be on top of the Search Engine Result Page list and get more clicks and traffic.

A lot of experiments were being done in the ways news was told. Anyone explored several digital tools that allowed the development of stories in different ways. This was the year of *immersive storytelling*. Malayala Manorama online started offering 360-degree videos.

Immersive storytelling aims to give the consumers a feeling of really being there' by using 3D gaming, 360-degree videos, and virtual and augmented reality technologies. The delivery of news and storytelling is made more hard-hitting and entertaining by using advanced technologies.

Media & TV

With the increase in internet connectivity and the availability of cheap smartphones, there was an explosion of online videos. Anyone who had

access to technology and internet-enabled phone also had the opportunity to create and disseminate videos. One could also do something unheard of until a few years back, creating one's channel. Depending on the interest, youtube is full of channels on DIYs, politics, news, entertainment, travel, food etc. The reach of many of these channels is much more than that of a traditional TV channel. The last few years have witnessed massive growth in the number of videos created and uploaded. In addition to internet connectivity and cheap smartphones, this was made possible by new digital tools that allow creating and editing videos on the go.

Most of the social networking websites like Facebook, Snapchat, Twitter integrated these tools so that anyone could create and disseminate these videos for the forty-two per cent of the world population that is connected with the Internet. Some of the emerging trends we are witnessing nowadays are immersive storytelling (360-degree videos), video selfies etc. The Quint, an online news platform, roped in Barkha Dutt, senior journalist, during the 2017 state elections (UP) for new media journalism. She used selfie videos and Facebook live extensively to cover UP elections.

Also, The New York Times announced its launch on snap chat discovered forum in 2017. The idea was to reach 41 % of all 18-34 years old in the US using snap chat. In comparison, an average individual US TV network reaches 6% of the same demographic.

The examples of The Quint and The New York Times show how new technology shapes the way media messages are constructed. TV no longer has the monopoly over videos, even online newspapers host videos on their portal.

Digital Media and Radio

Keeping in view the increase in internet penetration and growth of smartphone segments in India, traditional broadcast radio channels have taken their stations online. Some companies run internet-based radio services.

Radio has remained a strong partner of the media and marketing mix.

Radio broadcasters adapt well to how digital channels are changing the industry, turning mobile phones and the Internet into a way to extend their brands, protect their listener share, and reach new audiences. Radio stations these days have also created engaging websites and apps, where audiences can listen to podcasts, stream radio broadcasts and experience visual, video, text or interactive content.

Check Your Progress - 2

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

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

1. Which department has been entrusted with launching and implementing the Digital India programme?

.....
.....

2. Three visions of the Digital India programme are:

Evolution of Mass Media

3. In 2012, TOI forayed into augmented reality by launching.
.....
.....
4. is an app that delivers news content in limited words.

1.5 EMERGING TRENDS IN DIGITAL MEDIA

1.5.1 Data-Driven Journalism

Data Journalism, big data, data analytics are buzzwords nowadays. Data is being used by media houses to tell stories. The open data movement has made it easier for communicators and journalists to access and use data. Many countries are releasing their data as open data to be used by the public for various purposes. In India, the www.data.gov.in platform hosts data from all the Ministries and departments.

The data.gov.in is the result of the National Data Sharing and Accessibility Policy (NDSAP), which the Government of India notified in March 2012 to promote a culture of data sharing and data utility for meeting larger socio-economic goals. Adhering to the norms laid out by this policy, the National Informatics Centre (NIC) has set up Open Government Data (OGD) Platform India – (<http://data.gov.in>), which is a state of the art dynamic data-sharing platform espousing the principle of Open Government Data. The portal has many rich features to support this policy, such as the ‘Search & Discovery’ mechanism for instant access to various datasets of great importance. Community engagements around published datasets for innovative applications on open data can provide customised citizen services. Tools/ Apps/Visualisation so developed by using this platform has played a pivotal role in increasing transparency and citizens’ participation in the governance process.

The Emergence of Digital Media

Data Portals.org is the most comprehensive list of open data portals globally. It is curated by a group of leading open data experts worldwide, including representatives from local, regional and national governments, international organisations such as the World Bank, and numerous NGOs. The data on these platforms are freely available for the researchers to work on.

According to David Anderton, freelance journalist, Data journalism bridges the gap between statisticians and wordsmiths.

Data journalism uses sheer scale and range of digital information to tell compelling stories. Data journalism focuses not on what happened but on what a particular development means.

Several digital tools are available to work on data-based stories. Some of the tools are as follows:

1. Google fusion table
2. Lucid chart
3. Silk
4. Infogram

5. Picktochart
6. Tableaux
7. Carto

Activity - 3

Explore the following website to see the amount and range of data available: www.data.gov.in

1.5.2 Digital stories

Digital stories are a new way of storytelling. This means telling stories by using computer-based tools. They are also known as digital documentaries, computer-based narratives, digital essays, electronic memoirs and interactive storytelling.

*They all revolve around the idea of combining the art of telling stories with **Evolution of MassMedia**, a variety of multimedia, including graphics, audio, video, and Web publishing.*

The duration of digital stories is shorter, i.e. from 2 to 1 minutes. Some of the tools which are used to tell digital stories are:

1. Powtoon
2. Moovly
3. We video

Activity - 4

Following is the link to the digital story on Panama leaks. Watch this to understand the concept which is explained with Piggy banks. Find out some more digital stories on the web and attempt to make one yourself on a subject of your choice.

The Panama Papers, explained with piggy banks <https://www.youtube.com/watch?v=k2APYPjTWZ8>

1.5.3 Mapping in Journalism

‘Where’ are the important element of 1Ws and one H in journalism. It describes the place where the event took place and can tell a great deal about the story. Geography, culture, politics, and economics have to do with any event occurring at a particular place. So if it is news about the Nepal earthquake, the geographical features of that place become important. If it is news related to Arab spring, the political environment of those countries in the Middle East becomes important. While a few years back, the name of the place in the story was enough, or one or two shots of the location were adequate. Today, we are when Digital savvy readers prefer to have an immersive experience. How about feeling the place, exploring more than what one-shot offers, navigating from one place to another or visiting different locations to find out more information? It would be interesting and enriching to be a part of the scene and experience the story’s fun, excitement, horror, and pain.

With live broadcasts and geotagging, a lot of information is generated from various locations. The information generated from various sites can be an

excellent resource for journalists. Putting this information together and converting it into a story can be challenging.

Mapping can be a powerful storytelling tool, which journalists can use to take their audience on a journey following a narrative storyline or to illustrate and make sense of fast-moving breaking news events (Catalina Albeanu 2014).

Mapping places and live broadcasts are emerging trends and to add to this is the latest feature of 360-degree video by the Live broadcast app like Periscope. So it is not just a live shot, but with a 360-degree video on Periscope, one can experience moments with the broadcaster and take a look around — it's one step closer to being there.

The new technologies have made both generations and storage of data possible. There is a lot of data based on locations. According to Gustavo Faleiros, data journalist and media trainer, most data sets contain location-related information that makes them good candidates for mapping. “Maps are also a great tool for allowing user interaction,” said, “and just a great way to tell stories.”

There are hundreds of tools available to create maps. Some are free, some paid and some available on the fermium model. The learning curve for these tools is also varied. Some tools can be learnt easily, and some have a steep learning curve. To get started, Google Maps is the easiest option. One can start by mapping schools, colleges or the places to visit or places visited, to begin with. Google My Maps can be accessed by searching in a search engine or Go <https://www.google.com/maps/d/>

How to create your Map

- Step 1 Visit google maps and click on the menu
- Step 2 In Menu, click your places
- Step 3 Create maps

Other tools for mapping are:

- 1) Google fusion table
- 2) Story map
- 3) Carto
- 4) Infogram

Activity - 1

Create your Map by using Google my Maps.

1.6 CHALLENGES

1.6.1 Fake information

While digital media has made the work of communicators easier by providing cheap platforms and easy-to-use digital tools, it also poses many challenges for the producers and consumers of media messages. Undoubtedly, Digital Media has democratised the media landscape by providing others with an opportunity to create and disseminate. Anyone can be a producer, director,

writer and distributor, but this also poses many challenges. There is a lot of information available on the web that is inaccurate. Hence a new term, “Post Truth”, was coined, which means “circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief.”

During the US presidential election, we have seen a barrage of fake news like Pope’s support to Donald Trump and Hillary’s link with ISIS. There were hundreds of fake websites created in Macedonia to spread such false information. In India, too, we witness the continuous flow of such messages on WhatsApp, Twitter and Facebook. A lot of initiatives are being taken to curb this. Facebook has added “It’s a fake News story” options for the users to report any fake story. Facebook will also flag fake news stories with the help of users and third-party fact-checkers.

Many third-party fact-checking organisations have sprung up in the last few years to curb the flow of false information. Organisations like International Fact-Checking Network lead the movement. As part of this network, more than 100 websites conduct fact checks. In India, two organisations are conducting fact checks fact check-in and check4spam.com. Though there is a need for such initiatives, this should be supported by a digital literacy campaign.

1.6.2 Online abuse and Threats; Trolling

The Internet has made lives easier for those who want to use it for constructive purposes and those who would like to use it in destructive and disruptive ways. This practice of using the Internet for destructive ways in a social setting with no apparent instrumental purpose is termed Internet Trolling. The concept has emerged recently, and researches are being done on Internet Trolling as a phenomenon. The purpose and intent of trolls, their psychology and their process of creating chaos online is an important area of study, keeping in view the drastic increase in the number of such cases the world over. A closer look at the trolls and their comments shows a pattern. From a person seeking attention by being disruptive to the one enjoying hurting others displaying sadism to the one taking advantage of being anonymous online, internet trolls can be categorised in several ways.

Who are Internet trolls?

Internet Trolls are the individuals on the web who connect to create chaos. According to the researcher, Dr. Claire Hardaker, a troll is “a computer user who constructs the identity of sincerely wishing to be part of the group in question ... but whose real intention is to cause disruption and/or trigger conflict for the purposes of one’s own amusement.” Dr. Claire categorises trolls in the following manners according to their intent and the people or issues they target.

1. RIP trolls, who spend their time causing misery on memorial sites
2. Fame trolls, who focus all their energies on provoking celebrities;
3. Care trolls, who purport to see abuse in every post about children or animals
4. Political trolls who seek to bully MPs out of office; and many others.

Helen Lewis (2014), in her article “Who are the trolls” published in New Statesman, added two more categories to this:

1. Subcultural trolls - or “true” trolls - the ones who trawl forums full of earnest people and derail their conversations with silly questions, or hackers
2. Professional trolls” or “columnists”: writers and public figures whose media careers are built on their willingness to “say the unsayable”; or rather, say something which will attract huge volumes of attention (albeit negative) and hits.

Reasons for Internet Trolling

US Researcher Alice Marwick gives the following explanation for Internet Trolling: “There’s the disturbing possibility that people are creating online environments purely to express the type of racist, homophobic, or sexist speech that is no longer acceptable in public society, at work, or even at home.” Anonymity hence is the biggest reason for Internet Trolling. This anonymity leads to online disinhibition, which is one of the characteristics of Internet Trolling. According to Psychologist John Sella (2004), some people self-disclose or act out more frequently or intensely when online. He explored six factors that interact in creating this online disinhibition effect: dissociative anonymity, invisibility, synchronicity, solipsistic introjection, dissociative imagination, and minimisation of authority. Personality variables also will influence the extent of this disinhibition. All the above factors described by Sella triggers Internet Trolling.

Check Your Progress - 3

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

1. What is the main objective of open data movement?

2. is the most comprehensive list of open data portals in the world.
3. Name three digital tools that can help you to work on data-based stories.

4.Name three digital tools that can help you to create Maps.
5. What do you understand by “Post truth”.

1.7 LET US SUM UP

Digital Media in India is growing at a very fast pace. Keeping in view the various initiatives under digital India that will strengthen the digital

infrastructure, this trend will continue. The Indian Media Industry has embraced digital, and all the platforms, including print, magazines, TV and radio, are adapting themselves to remain relevant in the digital era. Digital Media offers many opportunities like new ways of storytelling, marketing and research. Still, at the same time, it is being criticised for creating a lot of chaos by spreading false information, and issue like trolling has caught the attention of many in recent years. The medium offers many features, and it is up to the people how these features can be exploited constructively. And the vision of Digital India puts it very succinctly that with Digital infrastructure for every citizen and government services on demand, there is also a great need for digital empowerment of citizens if India has to become a digitally empowered society and knowledge economy.

1.8 FURTHER READINGS

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8. John Seller, *The Psychology of CyberSpace*, <http://truecenterpublishing.com/psyber/disinhibit.html> Accessed on 8.2.2017

Weblinks

- Social News gathering and fact checking [ghttps://www.youtube.com/watch?v=LcNpFvVGDkw&t=9s](https://www.youtube.com/watch?v=LcNpFvVGDkw&t=9s)
- Cyber Psychology https://www.youtube.com/watch?v=B_03g2NLQPc&t=28s
Digital story Telling <https://www.youtube.com/watch?v=w0gsOhyE2q0&t=219s&index=1&list=PLNsppmbLKJ8IQ6pPSocBtzGh3PIA9y8NV>
- Data Journalism <https://www.youtube.com/>

watch?v=N3Csz2LvJxI&index=4&list=PLNsppmbLKJ8IKrTt3fhW LAZI7k92724ss

- Mapping for Journalism <https://www.youtube.com/watch?v=Q4 x 9 x pmmryI>

1.9 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1

1. Once digital media is encoded, it can be easily **manipulated**, **distributed**, and **rendered** (played) by computers and is easily transmitted over computer networks
2. **iReport** for CNN is an example of how mainstream media encourages its audience to interact with the platform Interactivity, Immediacy, Linkages, Convergence
3. This means traditional media offered limited interactivity earlier in letters to the editor or the feedback programmes on TV and radio. In contrast, digital media provides an opportunity for unlimited interactivity. This interactivity allows people to respond or react to the messages constructed by the media houses. Still, it also turns consumers into producers, wherein people are not just consuming media messages but also constructing media messages. This feature has turned passive consumers into active producers.

Check Your Progress 2

1. Digital India Programme has been launched by the Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Government of India.
2. Digital Infrastructure as a core utility for every citizen Governance and services on demand
3. Digital empowerment of citizens
4. Alive App
5. Inshorts

Check Your Progress 3

1. To promote a culture of data sharing and data utility for larger socio-economic goal
 2. DataPortals.org is the most comprehensive list of open data portals globally.
 3. Infogram, Google fusion table, Carto
 4. Google My maps, Storymaps, Google Fusion table
- 1 Circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief.”

UNIT 2: INFORMATION SOCIETY

Structure

- 2.0 Introduction
- 2.1 Learning Outcomes
- 2.2 Technological Transformation and Human Progress
- 2.3 The Emergence of Information Society
- 2.4 What is a Knowledge/Information Society?
- 2.5 Knowledge Economy and Knowledge Workers in an Information Society
- 2.6 Skill Acquisition and Training for Work in Knowledge Society
- 2.7 ICT Infrastructure and Knowledge Dissemination
- 2.8 Let Us Sum Up
- 2.9 Further Readings
- 2.10 Check Your Progress: Possible Answer

2.0 INTRODUCTION

The forces of globalisation redefined contemporary human life's economic, social, political, cultural, etc. They were revolutionising developments in Information Technologies (ITs) which occurred during post World War II or, more specifically, in the 1970s and afterwards, was an integral part of the 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) dominant in every aspect of the social system, where information processing and communication technologies became the core of productivity. Initiation in information handling, transmission, storage and retrieval becomes the key to human programmes and development and qualitatively different ways of life. In the emerging society — the information/ knowledge society — knowledge and information, the application of knowledge and information to knowledge generation and information processing/ communication became the fundamental constituents of human progress. It paved the way for the emergence of a global knowledge economy – a networked society with varied economic and educational requirements and principles of organising society, its moral values and identity.

It is restructuring the global social and economic equation — shifting from the income divide to the knowledge divide. In developed countries, ICTs have been the drivers of the knowledge society. As evident from the above discussion, the information age knowledge becomes the primary form of capital, and the accumulation of knowledge drives economic growth. Here the product with a high knowledge component generates higher returns and higher growth potential. In the knowledge economy, as distinct from peasant and industrial economies where economic wealth was produced

by using human manual labour and machines respectively, the generation, dissemination and exploitation of knowledge produce economic wealth predominantly. Thus, productivity is based on the acquisition or generation, dissemination, and application of knowledge or information in the emerging knowledge society.

The main objective of this Unit is to try and know more about information society. We will also try to trace its emergence and list its characteristics here. How and why the generation, dissemination and application of information/knowledge become an integral part of information society and dimensions of work participation in information society also will be analysed in this Unit.

2.1 LEARNING OUTCOMES

After reading this Unit, you will be able to:

- identify the factor that fueled the emergence of the information society in the age of ICT;
- discuss the distinctive features of the information society, the information economy and information/knowledge workers;
- explain the process of skill acquisition and knowledge dissemination in the information society; and
- discuss the role of knowledge and ICTs in empowering communities.

2.2 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 society's economic, social, cultural and political-institutional arrangements by introducing changes like work participation in the organisation of production. The transformation of human societies from pre-industrial/agricultural 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 humanity 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 the production of manufactured goods and acquiring 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 history and the changes brought about by it in the social and economic fabric are effectively unique. There was a phenomenal expansion of computer communication, electronic technology, and the service economy during this period. Over time, change has also been marked in the pattern of work participation. In the wake of industrialisation and rapid urbanisation, there has been a shift in work participation from agricultural to nonagricultural economies in the developed and developing countries of the world. However, this shift has taken a new turn in the wake

of the emergence of the post-industrial society whereby work participation increased in the service economy, including those in 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, the United Kingdom, America, Belgium, Japan etc., were in agriculture.

Although agriculture accommodates a substantial proportion of the workforce, there has been an increasing contribution of the service sector to the GDP in developed and developing countries. The blue-collar worker emerged very fast from the last quarter of the 19th century, and then growth became very fast till the second half of the 20th century. Indeed the industrial workers grew phenomenally in the first half of the last century in factories, mines, and transportation, and by the 1950s, they emerged to be the substantial majority of the working population in the industrialised countries. However, in the latter part of the 20th century, they have declined equally rapidly, first as a proportion of the total and since the early 1980s, even in absolute numbers. The emergence of the 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 the knowledge economy both in developing and developed countries. According to Alvin Toffler, agricultural waves, industrial waves and the information age are the three stages of the economic evolution of humanity. Presently, human society is undergoing the third Wave, i.e. the information wave, which is marketed by exposure to developments in information technologies and the predominance of service employment (Toffler 1980).

Box 2.1: 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.

- After the agrarian revolution, First Wave was the society and replaced the first hunter-gatherer cultures.
- The main components of the Second Wave society are the 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."
- The Third Wave is the post-industrial society. Toffler would also add that since the late 1950s, most countries are moving away from a Second Wave Society into what he would call a Third Wave Society. He coined many words to describe it and mentioned 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?

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

3. List any five features of the information society?

2.3 THE EMERGENCE OF INFORMATION SOCIETY

The roots of information society ideas are closely associated with post-industrialism. Although the scientific and industrial predecessors of electronics-based information technologies can be found in the late 19th and early 20th centuries, it was during the Second World War and its aftermath that the significant technological breakthrough in electronics took place: the first programmable computer, the transistor, source of microelectronics — the true core of Information Technology Revolution (see Box 1.2) (Castells 1996). Manuel Castells contends that the new information technologies, including microelectronics, computers, and telecommunications, diffused widely in the 1970s, accelerating their synergistic development and converging into a new paradigm.

Box 2.2: Tracing Information Technology Revolution

Although the technological inventions such as the telephone by Bell in 1876, the radio by Marconi in 1898, vacuum tube by De Forest in 1906 were landmark inventions in technological development, major technological breakthroughs leading to a technological revolution in human history based on electronics-based technologies can be said to happen during and after the Second World War. The invention of the 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 communication with and between machines. These processing devices are semiconductors, which are popularly called chips. A decisive step in microelectronics had taken place with the invention of integrated circuits in 1957. It triggered a technological explosion. The giant leap forward in the diffusion of microelectronics in machines came in 1971 with the invention by an Intel engineer of Silicon valley, Ted Hoff, of the microprocessor, the computer on a chip. Thus, information processing power could be installed everywhere.

A combination of three characteristics evaluates the power of chips: 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, and the microprocessor of 1999 measured 0.25 microns [*The Intel Core i9 processor of 2018 onwards is about 14 Nanometer - equal to 0.014 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 the 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 the mid-1980s out of the enthusiasm generated by two Harvard drop-outs, Bill Gates and Paul Allen. Having realised its potential, they went on to found Microsoft, today's software giant.

Indeed, to advance in microelectronics and software, significant leaps forward in networking capabilities have to be added, which was made possible by substantial developments in telecommunications and computer networking technologies during the 1970s. During this period, telecommunications were also revolutionised 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 a specific technological field amplifies the effects of related information technologies.

Source: Castells 1996

Manuel Castells (1996) argues that in the new economy emerging worldwide due to the current phase of the globalisation process, productivity and competitiveness are largely 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. Thus in the evolving information age, the generation, dissemination and application of

knowledge become the basis of all aspects of information and knowledge. Hence, it is also called information society or knowledge society.

Activity - 1

Do you think the contemporary period of technological transformation plays a significant role in social transformation? Why?

2.4 WHAT IS A 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 includes a converging set of technologies in microelectronics, computing (machines and software), telecommunications/broadcasting, and optoelectronics etc. This will be the axial principle of the economy and society. He forecasts the growth of a new social framework based on telecommunications which may be decisive for how knowledge is created and retrieved and the character of work and occupations people are engaged in. The computer will play a pivotal role. In the information society, knowledge and information will supplant labour and capital (as in the Marxian view) as the central variables of the economy. Here, the information will be treated as a commodity, and information possession will give its owner more power. 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 telecommunications infrastructure (Bell 1976). New forms of social interaction based on electronic communications devices are replacing older types of social relations. There is more application of IT to overcome the ecological and environmental problems associated with industrialism.

Manuel Castells (1996) prefers to call the emerging society an “informational” society where the generation and transformation of information generation have 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 the property as the mechanical means of production. The information age is attached to intellectual property in the form of patent, copyright, and trademark to be valued for creating profit. There is thus commodification of information and no time for reflection. In this society, however, it is not the commodification 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 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 the economy (Naisbitt 1986). Consequently, there has been the rise of the category of knowledge workers, who are fast replacing both histories' traditional groups and industrial society groups, which is quickly becoming the centre of gravity of the working population. This group is also becoming the single largest workforce group in the post-industrial society (Drucker 1994).

The social and economic dynamics of the knowledge society are widely shaped by the new forces of production, the 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. This economy is populated by an active and reflexive citizenry of wired workers, whose knowledge is the principal source of production; 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, its access depends on the payment of rent. Knowledge can be transformed into a fictitious commodity by transforming it from collective resources (intellectual commons) into intellectual property (e.g. 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 capitalism control through commoditisation and integration into a networked digitised 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 intellectual property rights.

It is now recognised that in the wake of the present phase of globalisation, ICTs have paved the way for the emergence of a 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 restructuring economic and social institutional arrangements of the knowledge economy of the 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 the accumulation of knowledge drives economic growth. This has emerged as a symbiotic relationship between knowledge economy and ICTs for releasing the creative potential and knowledge embodied in people and harnessing local-global connectivity for the generation of wealth and to widen the market of this economy.

Following are some of the distinctive features of the knowledge society:

- The basis of knowledge-based development in knowledge societies is the generation, dissemination and deployment of knowledge.
- Scientific knowledge is considered as a knowledge society skillset, and the scientific and technical group will rise into prominence.
- The social network in a knowledge society is based on telecommunication technologies.

- The creation and retrieval of knowledge play 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.
- Knowledge/information is treated as a commodity, and knowledge possession gives the owner more power.
- In a knowledge society, inequality is defined in terms of exclusion from knowledge.
- Knowledge is transformed from collective resources (intellectual commons) into the intellectual property for revenue generation in the knowledge society.
- In a knowledge society, the conflict is between minority knowledge workers and the majority of traditional workers.
- The knowledge society will be far more competitive than the earlier societies, as knowledge will be a key competitive factor for career and earning opportunities.
- Knowledge in the knowledge society exists in the specialised application by specialised experts. The central workforce will be the highly specialised people and not the generalists. Here the people who acquire the specialised knowledge will have more scope of mobility than ever. “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.”

Activity – 2

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

2.5 KNOWLEDGE ECONOMY AND KNOWLEDGE WORKERS IN A INFORMATION SOCIETY

In the knowledge economy, economic wealth is predominantly produced by using knowledge. Indeed it is an emerging society whose economic base is widely shaped by the generation, dissemination and exploitation of knowledge. The neoclassical economists have emphasised labour and capital as 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 the knowledge economy:

- Knowledge is a public good in the knowledge economy, as this becomes an object of extensive use.
- As the knowledge economy depends on the generation of knowledge for its prosperity, knowledge gained by experience is as important as formal education and training.

Internet & Social Scenario

- A knowledge economy becomes a learning economy to utilise its full capacity and take its optimum advantage. Learning means using new technologies to access global knowledge and communicating with others about innovation. In the learning economy, individuals, firms and countries will 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. Learning thus becomes a lifelong process in the knowledge economy.
- According to OECD, ICTs are the facilitators of knowledge creation. In the knowledge economy, ICTs release people's creative potential and knowledge. Wealth generation is becoming more closely tied to the capacity to add value using ICT products and services.

Individuals have been put in the centre of the knowledge and skills-based society in the information age. Individuals want to master their own lives and expect to contribute to the economy and society more than ever before. 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 skills, supported by public and enterprise investment in lifelong learning. ICTs empower the individual from a passive teacher-oriented approach to gaining knowledge; there is a shift towards learning for life and work centred around the individual. The need to learn how to access, analyse and exploit information and transform it into new knowledge is increasing, and in particular, Internet-based technologies offer great opportunities. The empowered individuals or the knowledge workers take charge of all spheres of society.

Knowledge workers of the information society are distinctively different from those of the agrarian and industrial society workers. They are defined as "symbolic analysts" who manipulate symbols rather than machines. They include architects and bank workers, fashion designers and pharmaceutical researchers, teachers and policy analysts. They are associated primarily in the 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 information society, the knowledge workers are valued very highly. For e.g. in many American manufacturing companies, 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:

- The knowledge workers are the leading class of the information society and necessarily the ruling class. They differ fundamentally from the other groups in history who occupied the leading dominant position in the values, expectations and social position.

- They get access to work and social positions in information 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 centre stage of the information society, formal schooling emerges to be the key institution. Here, the components of knowledge (knowledge mix), quality of learning, and teaching become a central concern of the knowledge society and 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”.
- Significantly, 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 have learned how to learn and continue to learn throughout her/his lifetime, especially in and out of formal education. Thus the acquisition of knowledge is not age-specific but lifelong.
- The knowledge workers are to learn different kinds of terms for different purposes – their performance capacities, strengths, limitations and tradeoffs between various kinds of terms. They are also to learn how to switch from one kind of team to another and integrate themselves into a team.
- Organisations, in general, provide the platform for the knowledge workers to convert their specialised knowledge into performance. In the organisation, the knowledge workers are at times the employee and at times the bosses.
- The knowledge workers also own the tools of production. Unlike the capitalist society, true investment in the information society is the knowledge of the knowledge workers; without knowledge, the whole production process is unproductive. The knowledge investment determines whether the employee is productive or not, rather than the tools, machines, and capital the organisation furnishes.

Activity – 3

What do knowledge workers do? 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 previous discussions in the information age, knowledge has a broader meaning. In the past, clever and creative people also used knowledge to design innovative products and services. But in the information age, instead of knowledge being vested in one or two creative people, it will be embedded in systems and databases and made available to all. To achieve maximum effectiveness, knowledge must be systematically accumulated, shared and purposefully deployed.

That means a knowledge-based society is centred on the three processes 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 concerning knowledge production will enable us 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 telecommunication network will echo the infrastructure required for knowledge dissemination, and economic structure will reflect the level of application of the knowledge in a knowledge-based society.

2.6 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 the 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. The nation's capability to apply knowledge to knowledge itself 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 the 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 attaining 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 using 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. The 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 contribute 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. Enterprises can improve productivity and compete successfully in increasingly integrated world markets by investing in their human resources. For e.g. in Denmark, enterprises that introduced the process and product innovation combined with targeted training were

more likely to report output growth. Countries with the highest incomes are also those where workers are mostly educated.

Even though higher education has always been formally designed as a structure for producing and organising 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 to maintain or increase their competitive advantage in a turbulent market environment. It implies that there is a need for firms 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. This will have to be reflected in the higher education curriculum – in its content, structure, length and mode of delivery. Thus, higher education has become a tradable product in the knowledge society.

The developed countries have higher access to ICTs than the developing countries. The 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 on 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 was spent previously. It becomes evident that human resources development and training contribute to improved productivity in the economy, reduce skills mismatches in the labour market, and promotes 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 to think and analyse information autonomously. Today, in several scientific disciplines, elements of factual knowledge taught in the first year of study may become obsolete before graduation. The learning process needs to be increasingly based on finding and accessing knowledge and applying it in problem-solving. Learning to learn, transforming information into new knowledge, and translating new knowledge into applications become more important than memorising specific information. In this new paradigm, priority is given to analytical skills: 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 include 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 regular updating of individual capacities and qualifications (Wagner 1999). In OECD countries, a lifelong-education model progressively replaces the traditional approach of studying for a discrete and finite period to acquire a first degree after secondary school or 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 required to refresh and enhance individual qualifications and 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 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?

2.7 ICT INFRASTRUCTURE AND KNOWLEDGE DISSEMINATION

In knowledge societies, knowledge creation is important; its dissemination and knowledge sharing with the world around it are 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 the income divide to the knowledge divide. Amidst the contemporary information revolution, which ushers with it a world of greater interconnectivity, accelerating the flow of data and shrinking time and national boundaries. Accessibility of the World Wide Web (WWW) is turning the world into a global village. With 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 understandable 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 happen from local to global, from poor to rich and vice versa. Knowledge dissemination and sharing became indispensable in today’s life for good governance, participation of people in their development etc. Unrestricted and continuous sharing of global and local knowledge between policymakers, 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 the inclusion of poor and marginalised communities in the change process.

Since the Second World War, rapid technological advances have occurred due to the convergence of telecommunications and computing technology, known as Information and Communication Technologies (ICT). ICT has been the driver of the knowledge society. They provide 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. For ages, knowledge has been passed on from one generation to another 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 can help the people to leapfrog some of the traditional barriers to development by using knowledge in various ways, such as 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 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, and 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 ideas. Internet boundless potential to reach everyone who is connected to target specific information.

The most significant advantage of ICTs is the reach and low cost of technology and data transmission. Technically, every individual can have 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, mainly telecommunications, computer-mediated communication — the Internet and mass media of communication.

Telecommunication Network

Telecommunication networks are a key facilitator to the knowledge society. Telecommunications systems are one of the most complex systems ever built by humankind. It has penetrated every aspect of human life. In the 19th century, the invention of the telegraph and the telephone forever changed how messages moved worldwide.

Telephony and mobile phones made possible virtually instantaneous two-way communication between any two places on the planet connected by appropriate wiring and switching devices. Most telephony networks were developed as public monopolies, though the 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 the 1980s, governments have come under increasing pressure to commercialise, privatise and deregulate their telecommunications industries. By the late 1990s, virtually all national telephone networks had partly privatised and opened up to the national and international competition. This resulted in drastic decreases in international communications services' price, thereby promoting faster and cheaper knowledge dissemination.

Telecommunications is now, but one form of processing information; transmission and linkage technologies are increasingly diversified and integrated into computer-operated networks. Mobile phones show a convergence of different communication technologies. Sending images, text messages and, of course, audio and video are just click-aways for millions of mobile users. Every month, it seems, a new mobile 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. The technologies of photography, broadcasting, audio system and the Internet all converged into one gadget of mobile phones.

Computer-Mediated Communication Network — the Internet

The Internet network began in the 1960s (see Box 1.3) in the United States and soon became common. The Internet network became the backbone of computer-mediated communication in the 1990s since it gradually links up to 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, the Internet network crossed 6 million computer networks. In 2020, ICT connected 4.5 billion people to the Internet globally. A detailed analysis of internet access is already explained with Unit 3 of the course MNM011, and learners may refer to it.

Box 2.3: The Beginning of the Internet

The Internet originated in a daring scheme imagined in the 1960s by the technological warriors of the 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 the 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 have 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 and the swift advances in fibre optic network technologies resulted in the rapid growth of computing power and the communication power of people worldwide. These advances in technology-enabled 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 analogue signalling, 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 mobile and television, the radio and camera, the fax and word processor, the database and the spreadsheet all are integrated into one system, the Internet, which makes the Internet unique in its capacity to support two-way interactions. Since the early 1990s, the World Wide Web (WWW) has become the mainstream environment for creating and disseminating digital information.

Previously access to the Internet was almost exclusively from personal computers. This has been changing for one decade, with the advent of smartphones. Major online services are available through mobile apps rather than the Internet. This development enabled remote access to the Internet and its related services without a basic ICT infrastructure.

Check Your Progress: 2

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 the characteristics of information/knowledge society?

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2. Enumerate the profile of knowledge workers?

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3. Discuss the challenges and opportunities of Information Society?

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2.8 LET US SUM UP

During the second half of the 19th century, there began a great revolution in the 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 are marked by rapid advances in science and technology, the convergence of information, computer and communication technologies, the reduced cost of processing and disseminating information, and the increasing connectedness of nations. These revolutionary changes are said to transform societies into smart communities largely through the converging new information, computer and telecommunication technologies (ICTT).

This Unit examined the background of the information revolution and the characteristic features of the emerging society. It also analysed why and how knowledge becomes the basic constituent of this society.

2.9 FURTHER READING

1. Castells, M. (2011). *The rise of the network society* (Vol. 12). John Wiley & sons.
2. Castells, M., & Cardoso, G. (2005). *The network society: From knowledge to policy* (pp. 3-21). Washington, DC: Center for Transatlantic Relations, Paul H. Nitze School of Advanced International Studies, Johns Hopkins University. <https://www.dhi.ac.uk/san/waysofbeing/data/communication-zangana-castells-2006.pdf>
3. Lyon, D. (2013). *The information society: Issues and illusions*. John Wiley & Sons.
4. Van Dijk, J. (2020). *The network society*. Sage.
5. Webster, F. (2014). *Theories of the information society*. Routledge.

2.10 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress: 1

1. In his book *The Third Wave*, Alvin Toffler describes three types of societies, based on the concept of 'waves' - The first Wave revolves around agriculture-based society; Second Wave characterised industry society, and the Third Wave is the post-industrial society.
2. Advances in microelectronics and software have led to major leaps 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. 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.
- d. Knowledge will be a key competitive factor for career and earning opportunities.

Check Your Progress: 2

1. Following are some of the distinctive features of the information/knowledge society: The basis of knowledge-based development in knowledge societies is the generation, dissemination and deployment of knowledge. Scientific knowledge is considered as a knowledge society skillset, and the scientific and technical group will rise into prominence. The social network in a knowledge society is based on telecommunication technologies. The creation and retrieval of knowledge play 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. Knowledge/information is treated as a commodity, and knowledge possession gives the owner more power. In a knowledge society, inequality is defined in terms of exclusion from knowledge.
2. The distinctive features of the knowledge workers are: The knowledge workers are the leading class of the information society and necessarily the ruling class. They get access to work and social positions in information society through formal education and training. The knowledge workers are to learn different kinds of terms for different purposes – their performance capacities, strengths, limitations and tradeoffs between various kinds of terms. They are also to learn how to switch from one kind of team to another and integrate themselves into a team. Organisations, in general, provide the platform for the knowledge workers to convert their specialised knowledge into performance. In the organisation, the knowledge workers are at times the employee and at times the bosses. The knowledge workers also own the tools of production.
3. The opportunities in the information society are: The most significant advantage of ICTs is the reach and low cost of technology and data transmission. Technically, every individual can have 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, mainly telecommunications, computer-mediated communication — the Internet and mass media of communication. The challenges are access to ICTs and information, the ability to utilise the retrieved information in a productive manner and the capability to participate in the wider communication process.

UNIT 3: EMERGING TRENDS - MEDIA, INTERNET, GLOBALISATION

Structure

- 3.0 Introduction
- 3.1 Learning Outcomes
- 3.2 Media
 - 3.2.1 Access to Media Information and Human Rights Protection
 - 3.2.2 The Media as a Tool of Human Rights Abuse
- 3.3 Internet
 - 3.3.1 Internet and Human Rights
- 3.4 Globalisation and Human Rights
 - 3.4.1 Global Social Movements
 - 3.4.2 Globalisation in Media
 - 3.4.3 Globalisation Trade and Investment
- 3.5 Let Us Sum Up
- 3.6 Further Readings
- 3.7 Check Your Progress: Possible Answers

3.0 INTRODUCTION

In the present age of globalisation and the ever-growing role of information technology, both opportunities and challenges have emerged for the promotion and protection of Human Rights. It is well known that the end of the cold war brought major changes in international political and economic relations. In the process, a new world economic order guided by international agencies like the International Monetary Fund, World Bank, World Trade Organisation, etc., has emerged. This has greatly removed trade and tariff barriers, making Transnational companies' entry into many countries quite easy. A key component of the post- Cold War-era since 1991 information flows, rapidity of transmission and transparency characterised, among other things, the contemporary world. Modern communications, especially the Internet and television, have rendered time-space factors obsolete. Over the years, news anchors, reporters, photojournalists, and other media actors in humanitarian crises have become a common occurrence. In this sense, the media has emerged as a powerful instrument in bringing to light violations of human rights. States are under pressure to fulfil international obligations while also losing some of their sovereign powers. Thus there have emerged interesting developments and challenges for the human rights movement worldwide. It is true for India also. In this Unit, we will discuss some of these developments.

3.1 LEARNING OUTCOMES

This Unit deals with the emerging trends in the Human Rights movement in India. After going through this Unit, you will be able to:

- understand the place of media in the post-Cold war era and global public scrutiny;
- explain the nature of the Internet and the challenge of digital literacy for the 21st century; and
- evaluate how the international human rights movement is an integral part of globalisation.

3.2 MEDIA

The traditional wisdom would have us believe that media and democracy reinforce, sustain and nourish each other. The former is considered the Fourth Estate, the other three pillars being the organs of the government, namely, the legislature, executive, and the judiciary. According to Rajni Kothari, modernisation, conceived as adherence to the principles of the rule of law, equity, justice, freedom, equality and other related principles, is facilitated by mass media. The Indian mass media played this stellar role during the freedom struggle. In his pioneering work, *State Against Democracy: In Search of Humane Governance*, Kothari reminds the state of its bounden duty to respect and protect people's fundamental freedoms. The media have a right and a duty, as a check on the state's power to inform, to report truthfully about government misconduct and to expose abuse of public authority. As a derivative of the latter, power tends to corrupt its wielders, and absolute power corrupts absolutely.

3.2.1 Access to Media Information and Human Rights Protection

With a globalised media, states are now confronted with the glare of global public scrutiny into their human rights practices. A state that violates human rights norms, accepted by the global community in various international treaties, may attract the opprobrium of other countries and international organisations of international audiences and its citizens. Besides, global modes of communication can inform local populations about the abuses their governments are veiling from them, thus inducing the formation of social or civil movements against the status quo. The global sharing of information can not only provide victimised groups access to supporters throughout the world, but it can also increase the costs to the state for its repressive domestic policies towards its citizens. As the ability to access information increases, the dispersal of knowledge becomes virtually impossible to stop. This circulation of information impels the estate to act transparently. Underlying those described above, the Vienna World Conference on Human Rights (1993) stressed the importance of the objective, responsible and impartial nature of information about human rights and humanitarian issues for whom freedom and protection should be guaranteed within the framework of national law.

Today, no state can completely block communication technologies. With the advent of satellite dishes and their cognate transmission systems and the Internet, repressive regimes can no longer murder or torture their citizens in complete secrecy. Access to sources of mass communication lifts the veil of secrecy necessary to transgress human rights. Media coverage of human rights violations is likely to prevent violations by exposing them.

News coverage of human rights shapes public opinion, affects foreign policy and serves as informal means of documenting abuse. The globalised communications system can provide human rights groups with information, assistance and support in their crusade against oppression. When people know about human rights and are aware of human rights abuses, they are more likely to seek to protect them, and exposure can lead to changes in policy by the state concerned. Human rights activists and non-governmental organisations can use global media to publicise human rights violations to shame perpetrators into changing their behaviour. This connection may also cite pamphleteering, Internet blogs, stage theatre, nukkad natak (and other traditional forms of media representation).

In this context, the case of India can also be highly illustrative with regards to human rights- media relationship. The imposition of national emergency in 1975, the atrocities committed against the Sikh community in 1984, the ongoing imbroglio in Kashmir in which the Hindu Pandits have been at the receiving end and other radical left movements symbolised in the form of Naxalism/ Maoism and other human rights abuse involving, Christians, Muslims and Dalits, starkly brings out the portrayal of human rights in media. The English language print media, in particular, has, with a few exceptions, brought out the reality in an objective manner. The vernacular print media remains much to be desired in this direction.

In all international human rights instruments, access to media has been enshrined as one of the fundamental freedoms available to all globally. Article 10 of the Universal Declaration of Human Rights (UDHR), 1948, states “everyone has the right to freedom of opinion and repression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.” Free and open media are important factors in promoting and protecting human rights. The media can disseminate human rights information, mobilise human rights NGOs, foster popular participation in civil society, promote tolerance, and unearth government activity.

It is plausible to assert that the greater the number of communication receivers- radios, computers, newspapers, or TVs- the more informed the population. Thus, the less likely the government will be to use violence against its citizens. Suppose it is true that the media are an asset when it comes to publicising human rights violations and possibly preventing them from happening again. In that case, it is logical to assume that the more media forms and media receivers there are in one state, the more likely the estate is to be respectful of human rights.

Among the benefits of the free flow of information and opinion are the prevention of human rights violations. The ability of the press to serve as an avenue for free expression, allowing dissenting opinions to be voiced, providing alternative information and coordinating independent explanations and analyses also benefits human rights. Controlled, intimidated, and embedded media merely promote state rhetoric and propaganda. A free press can question the state’s policies. Media, under the control of national and international moneyed sections, safeguard, in reality, the interests of their respective classes. A study by a noted media specialist concludes

that advances in information technology benefit human rights movements by enabling rapid transmission of information to monitor and respond to human rights violations. To advance human rights, citizens should be able to send and receive information freely. Human rights atrocities can rarely be done without public knowledge when the general public has access to TV, radio, Newspapers or Internet Communication.

Media globalisation leads to human rights globalisation. Buttressing the latter gives fillip to the notion of the universality of human rights. The UDHR, the International Covenants on Civil and Political Rights (ICCPR). 1966, to name just the two, do speak eloquently of the universality idea.

The upshot of those described above undoubtedly tells us that independent and free media plays a crucial role in maintaining human rights standards. A free press can ensure that the people will have access to information on how their government behaves towards its citizens; Independence media can reduce the secrecy needed to torture, murder, or disappear citizens by monitoring state behaviour and exposing abuses of public authority. Furthermore, media access is beneficial and necessary to maintain human rights standards. The media is difficult for the state to control, but not impossible.

3.2.2 The Media as a Tool of Human Rights Abuse

The malignant role of contemporary communication technology in encouraging human rights violations has also come to the fore in different parts of the world. The United States Institute of Peace (USIP) has, in its report of 2003, concluded that “across the globe, media have been used as tools to inflame grievances and accelerate the escalation towards violence.” The literature is galore with cases where the mass media were used to incite violence, murder and genocide, most recently in Rwanda, Somalia and Yugoslavia. They acquired international notoriety for the kind of treatment they meted out to their citizens in a not-so-distant past. With its capability of reaching large numbers of people, it can thus also be used to inflame hatred and mobilise the public to murder their neighbours. The use of the media to inhibit human rights often requires closed or state-controlled media. Genocide, as was seen in Rwanda, necessitated state-controlled media with many receivers to incite many potential killers. A government or a military can use the media to shape an image of certain groups as enemies of the state and the people’s security. Consequently, once these groups are characterised as treacherous enemies or evil predators, they can be eliminated with little impunity.

In post-independence India, the government passed the Press Council Act in 1978. Section 13 of the said Act aims to preserve the freedom of the press and maintain and improve the standards of newspapers and news agencies in India.

In most recent times, Indian media has been beset with what is rightly described as the ‘crisis of content’. The crisis has manifested itself prominently in the case of the television news media, which attempts to sensationalise the issue related to women, tribals, minorities, besides other vulnerable sections of the society. The Vice President of India, While uncovering the problem, Mohd.

Internet & Social Scenario

Hamid Ansari said in July 2008: the phenomenon of convergence between news media, entertainment and telecom has meant that the demarcation between professional journalistic Output, public relations, advertising and entertainment is fast blurring. Questions are being raised whether journalists understand these demarcations and respect them or sacrifice them for commercial gain and monetary benefits. Today’s public perception is that the ethical underpinning of professional journalism is weekend. The fourth estate of the Republic is at a crossroads, facing the most critical challenge in its history. The defining characteristic of the last decade has been the progressive transformation of the Indian citizen into a significant consumer of media content and products. At the broad level, one finds entertainment, especially films and reality show entertainment, increasingly thrusting itself into news media, thereby getting drawn into the culture of consumerism, a bane of western societies masquerading as globalisation. The pressure of TRP ratings has meant that astrology, superstition, crime and sleaze have prevailed, and the broad trend towards tabloidisation continues.

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. Define Fourth Estate? Explain its role in a democracy.

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2. Explain a key feature of media in the post- Cold war era?

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3. How do the media prevent human rights abuse?

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4. Explain the relationship between the Universal Declaration of Human Rights (UDHR) and freedom of opinion and expression?

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3.3 INTERNET

We live in a period of constant change. We can expect rapid increases in the rate of change as the population is expected to double over the next few decades. One root of this change is technology, and another source is knowledge and information. The quantum of information available to the individual is projected to double every five years. More people, more tools and more knowledge are the realities of modern life. The future promises us more changes than we have ever experienced before. The rise of information technology as an artefact of everyday life as the modern world has brought the dawn of a new era often christened as the ‘Age of Information. It changes the way we perceive the world, how we think and

communicates with one another, what we learn, where we work, entertain ourselves, spend free time, shop and even meet people. The Internet provides one example of a virtual environment where these changes in perceptions and relationships are constantly happening, enabling new social realities to emerge. Today, partially because we manipulate information with great ease, we are discovering the realities of our social constructs.

The Internet has become widely useful. It has been accepted much quicker with the most remarkable speed than the telephone or the radio. As the Internet forges ahead ambitiously towards critical mass, some social scientists are beginning to carefully examine the policy implication of current demographic patterns of its access and usage. Unsurprisingly, access is not distributed haphazardly but correlates strongly with income and educational levels. Looming large is the concern that the Internet may not scale economically, leading to Lloyd Morrisett, the former President of the Markle Foundation, calling a 'digital divide' between the information 'haves' and 'have-nots'.

It is assumed that most transactions in the new society will shortly be mediated by information and communication technologies. In such an environment, the ability to harness information and communication technology is critical in producing material and non-material goods and services and, more importantly, in their consumption. It also applies to social activities such as education, entertainment, art and generations of awareness.

3.3.1 Internet and Human Rights

As already mentioned, the Internet as a new medium of communication has become quite useful for disseminating information. Human Rights movements are also becoming a significant tool to generate awareness, protect international human rights standards and expose the violation of human rights both by states and non-state actors. It allows individuals to express their ideas and opinions directly to a world audience and easily to each other while allowing access to many more ideas, opinions and information than previous media have allowed. It has been observed that the Internet is a transformative force that can help open closed societies and provide the near-instantaneous flow of information to inform the public, mobilise for change and ultimately hold institutions accountable.

According to the Centre for Democracy and Technology, the effect of access to and use of global interactive media has been to promote and defend civil and political rights worldwide. Through the Internet, citizens from the most repressive regimes can find information about their government and their human rights records that newspapers may dare print.

The Government of India perceives that telecommunications and information technology is a prerequisite for the country's socio-economic transformation. It also realises that this sector has a vital role in India's Gross Domestic Product (GDP). To translate this reality into concrete action, the Government of India felt that a forward-looking telecommunication and information policy was necessary. The Government-owned media has been made autonomous through the establishment of Prasar Bharti. Now private radio and TV Channels operate without much governmental control and interference.

In 1994, The Government announced the National Telecom Policy. The Latter included, among others, the objective of Universal availability of basic telecom services to all villages. The policy contained the Internet Service Provision (ISP) by private operators who were licensed to operate and provide such services. However, the 1994 policy could not meet the declared objectives because the private sector entry into the venture has been slower than what was envisaged. An Act was promulgated on the 28th March 1997 to establish the Telecom Regulatory Authority of India (TRAI). The Department of Information Technology (DIT) has set up the National Internet Exchange of India (NIXI) in 2004 to ensure that Internet traffic originating and destined for India should be routed within India. The Latter aimed at providing an effective regulatory framework and adequate safeguards to ensure fair competition and protection of consumer interests.

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. How is the Internet helpful in the promotion and protection of Human rights?

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2. Describe the negative aspects of the Internet.

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3. How can information and Communication Technology (ICT) synergise the digital environment?

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3.4 GLOBALISATION AND HUMAN RIGHTS

The international human rights movement is an integral part of globalisation. Globalisation draws people into global networks to begin to interact more regularly with others across national and cultural borders. Both globalisation and human rights claim to be universal ideas. However, each one of these universalising processes evokes resistance. Globalisation has inbuilt tendencies to shift decision-making processes away from governments and peoples to globalised economic institutions and transnational corporations with a developing interest in the socio-cultural welfare or human rights of people in the developing world. Richard Falk identifies two forms of globalisation that operate simultaneously: “globalisation from above” and “globalisation from below” While the former is imposed from the outside and is controlled and led by transnational corporations (TNCs) and international financial institutions, with states facilitating the process, the latter is local, grassroots and enjoys broader mass support as it mobilises global civil society. The two levels, according to Falk, are in a dialectical relationship. Increasingly, hegemonic neo-liberal globalisation is counterbalanced

with an emerging global civil society. While globalisation from above leads to a hegemonic human rights discourse based on universalism and secularism, globalisation from below fosters a more holistic and integrated vision of rights. The latter is compatible with the worldwide realisation of human rights. While globalisation from above is inherently homogenising and hegemonic in its tendencies, globalisation from below is essentially pluralistic.

The growing activism of non-governmental organisations (NGOs) has led to domestic social and political struggles. NGOs are keen on building a culture of human rights from below, and this globalisation is a product of local agency rather than global hegemony. They are focusing on grassroots empowerment and education. NGOs have become agents of change. NGOs often construct their universalism that conforms to those advocated by transnational networks. Many observers have emphasised that globalisation can produce either accommodation or resistance. James H Mittleman maintains that “globalisation is a multi-level set of processes with built-in-structures on its power and potential, for it produces resistance against itself. In other words, globalisation creates discontents not merely as latent and undeclared resistance, but sometimes crystallised as open counter movements”. Globalisation paradoxically breeds localism and universalism as part of the same process.

Globalisation need not necessarily usher in a progressive era to promote universal human rights. Contemporary globalisation is implicated in a set of growing disjunctures between the global diffusion of the idea of universal human rights and the social, political and economic conditions necessary for their effective realisation. As the conditions of globalisation are intensified, the capacity of states and the global human rights regime to ensure compliance with the established global norms is significantly eroded. Furthermore, because globalisation creates global patterns of hierarchy and stratification, both of which accentuate growing inequalities within and between nations, it contributes to the bifurcation of the global system into zones of conformity and zones of instability. In the latter domain, internal strife, poverty, and repressive mechanisms undermine the basis of conformity with emerging global norms and hence begets chronic resistance to universal human rights standards. This domain neo-liberal vision is intimately connected to the world-historical shift in power from the nation-states to increasingly mobile types of capital and international financial institutions and international organisations. The importance of articulating democratic and progressive forms of citizenship at a national and a local level. Regional and global level as part of a wider effort to resist the profit maximising consumption-oriented, market-based citizen-subject of the neo-liberal imagination is very much a need of the hour.

The politics of human rights as distinct from politics for human rights is observable at the international level. Human rights at the latter level become the function of power dynamics. Hypocrisy is visible among the majority of the UN member states that have used the Organisation to serve their foreign policy objectives. Powerful states did not care for the UN when they perceived that it was not used to them. They took unilateral actions in

the realm of international relations, impacting very gravely on the state of human rights, besides other areas.

Following the 11th September attacks in the U.S.A., countries in countering terrorism have resorted to actions that negatively impacted the state of liberties the world over. Some religious and ethnic communities have been targeted in the name of the war on terror.

3.4.1 Global Social Movements

The phenomenon of globalisation has given rise to various global social movements, one of whose objective has been the promotion and protection of human rights. To give an institutional expression, the latter led to transnational feminist networks whose common agenda includes women's human rights, gender, justice, reproductive health rights, violence against women, peace and anti-militarism and feminist economics. These networks are variously described as global civil society entities, transnational advocacy groups, transnational social movement organisations, international and non-governmental organisations, cumulatively constituting what is described as a transnational public sphere.

Closely intertwined with those described above are what Margarted Keck and Kathryn Sikkink call 'transnational networks' or 'activists without border', that have been able to influence policies in such areas as human rights, environment and women's rights. Often led by international and domestic NGOs, they work through international campaigns, influencing the public. Government and international organisations. Keck and Sikkink trace the history of transnational development networks from the anti-slavery movements of the 18th and 19th centuries.

Globalisation is often supposed to have paved the way for the universalisation of peace since only in a tranquil world can trade and exchange of ideas flourish. But inaction, globalisation of goods, capital and people often leads to the globalisation of violence. Also, a powerful global justice movement has taken shape out of countless resistance struggles. A new transnational social activism is increasingly a potent political force in the global equation. Any attempt to understand the world and act in the world as social agents must contemplate globalisation as a concept and process. Perhaps much of the discourse on globalisation is an ideological argument for neo-liberal policies for which 'there is no alternative' (TINA). This view stresses domestic reduction in the government's economic role, deregulation, privatisation and global reduction in tariffs, opening up of capital markets, liberalisation of foreign investment regimes etc., in the context of enhanced reliance on market mechanisms. The faith market as a panacea for all society's economic ills has led critics to condemn globalisation as 'market fundamentalism'.

The Third world nation-states play an active and sometimes contradictory role in neoliberal globalisation. Usually, they are seen as the instrument of propagation for the ideology of neoliberalism. But as peripheral states, they are also constrained by imperial states. The search for how Third world states can be transformed to achieve some autonomy and political will to control the dominance of the instruments of neo-liberal globalisation-the

International Monetary Fund(IMF). World Trade Organisation (WTO), General Agreement on Trade and Tariff (GATT) – has made the nation-states a contested terrain. The World Bank (WB) rhetorically claims to uphold the “satisfaction of needs” but rarely follows through in practice. In contrast, the International Monetary Fund (IMF) would say, if pressed, these needs are more likely to be satisfied by the free market. The WTO is even more caricatural since all human activities, including food, water, health education, culture, etc., are potentially profitable commodities tradable in the world market.

By implication, state sovereignty becomes a casualty in the process of globalisation. Politically conceived, globalisation refers to the consolidation of universal institutionalisation of normative, ethical and legal governance and a cosmopolitan law of global civil society. Besides affecting other spheres of human life, the governance ideal is intimately tied to the international human rights regime, even though it contains elements of both imperial harmonisation and homogenisation. The message of globalisation is thoroughly integrated into public discourse by mass media owned by the globalists themselves, a phenomenon known as convergence.

3.4.2 Globalisation in India

In the context of India, neo-liberal economic policies have been associated with what is called reform trinity-’liberalisation, privatisation and globalisation (LPG)’. These three economic concepts have necessitated ongoing policy reforms by the Union and State governments. The architects of globalisation in India have conceived of India-centric globalisation. The content, sequence and timing of policy measures are regulated to contain potential setbacks while maximising the positive outcomes of global economic integration.

In the context of India, it is important to harness the force of globalisation to benefit human welfare and try to limit its adverse effects. Kaushik Basu, in 2001, echoed a similar view when he observed that globalisation would bring with it many ills. But on balance, it will open up more windows of opportunity for India than close. India has advantages to using globalisation as a force for development and poverty reduction. This demands a high order of Political commitment and management. Dwelling upon globalisation’s social impact, Prof. Pranab Bardhan in 2001 commented that all around the world today, many advocates of social justice are in some state of despair. Some fear that social justice is a lost cause in a global economy. Thus, the LPG as conceptualised in India has been durable but somewhat distinct from its third-world counterparts.

Not with standing the above, it is pertinent to uncover the relationship between economic globalisation and its impact on human rights, particularly the poor. Those critics who view globalisation from the human rights perspective conclude that human rights have been adversely affected by globalisation. In this connection, the critics cite human development indices of the United Nations Development Programme (UNDP), independent reports by international civil society organisations such as Amnesty International, Human Rights Watch and others.

3.4.3 Globalisation Trade and Investment

The rapid increase in trade and investment over the last 20 years has offered new hope to create growth and the resources needed to promote the full enjoyment of human rights and eradicate poverty.

Office of the High Commissioner of Human Rights (OHCHR) work on “human rights, trade and investment” has sought to analyse rules and policies on trade and investment to identify the broad areas of action at the national and international levels that would promote fairer trade that can improve the enjoyment of human rights.

The seven areas of particular relevance to human rights include:

- Agriculture
- Government procurement
- Intellectual property protection
- Investment
- Services
- Social labelling for fair trade
- Public morals and general exceptions to trade and investment rules.

Human rights principles and goals of particular relevance to trade include:

- Equality and non-discrimination
- Participation
- Accountability
- International cooperation

As a practical measure to devise trade reform that promotes the enjoyment of human rights, OHCHR has on several occasions encouraged States to undertake human rights impact assessments of trade rules and policies both during the process of trade negotiations as well as after a period of implementation of trade rules and policies. Such assessments should be public and participatory and focus particularly on the effects of trade reform on disadvantaged and vulnerable groups and the gender effects of trade rules and policies.

However, many observers point out that in practice, the development of a global economy has been matched by the development of a global society.

International institutions are not strong enough to prevent war or large scale abuse of human rights in individual countries where TNCs are operating, and they can exploit the situation for their profit motives. They can also exploit the bio-diversity and environment, running both in the long run. Global financial markets being largely beyond the control of national or international authorities, the TNCs and financial markets have grown so powerful that they can impinge upon the human rights of individuals in the society and sovereignty of the state in actual practice.

Globalisation has, thus, led to the weakening of the state and rendered the relationship between the community, the state and the corporation fluid. It has entrenched the powers and widened corporations’ freedoms, eroding the powers and freedom of people in their diverse community settings. Social

scientists have begun to talk of ‘reinventing government’ because the state is turning more one-sided in representing corporate interest and failing to represent citizen and Community interest.

For citizens and communities, the erosion of State power implies withdrawal of two protective umbrellas” to the individual citizens and the community. The first is the protection available through the regulation of (commercial) profit-seeking behaviour so that destruction of livelihoods, environment and people’s health can be prevented. The second is the protection built into traditional environment rights and rights to knowledge and culture, rights which are often customary, indigenous and not written in the law, but which are central to secure livelihood and survival options, especially of marginal groups such as women, tribal, landless and small peasants, farmers, traditional healers and artisans etc.

Because of the alarming situation created by the power and reach of the TNCs, it has become imperative to re-examine the efforts of agencies and instruments promoting world trade and the global economic system. Rubens Recuperate is right in warning that if ‘globalisation is to deserve its name, it has to include and not to exclude, to integrate and not to marginalise”. TNCs must generate enough jobs with adequate pay and must help reduce the poverty of host and home countries. They should not rush into a heady philosophy of market profitability and economic efficiency but must bring human development and social protection into the equation. After all, the United Nations, which drew up to the Charter of Human Rights, also created World Bank and IMF to help revamp the war-ravaged economies of its member countries. The denial of these rights and fundamental freedoms is not only an individual and personal tragedy but also creates conditions of social and political unrest, sowing the seeds of violence and conflicts within and between societies and nations. In a global society, regional and local conflicts threaten to engulf the world community. But the IMF and World Bank, in their haste to create a new world economic order, failed to notice the activities of TNCs. However, their role in promoting international trade and reducing trade barriers cannot be discounted.

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. Explain the interrelationship between globalisation and Human rights?

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2. Distinguish between politics of human rights and politics for human rights?

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3. Explain the relationship between non-liberal and globalisation.

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4. How are trade and investment relevant to human rights?

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3.5 LET US SUM UP

In this Unit, you have read that The ‘Fourth Estate’ refers to the media. It has a right and duty, as a check on the state’s power to inform, to report truthfully about government misconduct and to expose abuses of public authority. In the post-Cold war era, the key element has been the rapidity of information flow throughout the world. States are now confronted with the glare of global public scrutiny into their human rights practices. A State that violates human rights norms, accepted by the global community in a variety of international treaties, may attract the condemnation of other countries and that of international organisations, international audiences, and its citizens. The global sharing of information can not only provide victimised groups access to supporters throughout the world, but it can also increase the costs to the estate for its repressive domestic policies towards its citizens. The media coverage of human rights violations is likely to prevent violations by exposing the violators. News coverage of human rights shapes public opinion, affects foreign policy and serves as an informal means of documenting abuse. Human rights activists and NGOs can use global media to publicise human rights violations to bring about behavioural change among the perpetrators.

We also live in a period of constant change. One root of this change is technology, and another source is knowledge and information. The rise of information technology has brought with it the draw of a new era often christened as the ‘Age of Information. Governments will face important economic, technological and political challenges to succeed in the development of internet generation. A grand challenge for the 21st century has been to access Internet facilities to all in the present context of globalisation. The Internet has become a very important tool for disseminating information and coordination for the promotion and protection of human rights.

The international human rights movement is an integral part of globalisation. Both globalisations and human rights claim to be universal ideas. Richard Falk identifies two forms of globalisation from above” and globalisation from below”. The politics of human rights as distinct from politics for human rights is observable at the international level. Human rights at the latter level have become the function of power dynamics. Powerful states did not care for the UN when they perceived that it was not used to them.

On the other hand, the growing activism of non-government organisations (NGOs) has led to domestic social and political struggles. The neo-liberal idea stresses domestic reduction in the government’s economic role, deregulation, privatisation and global reductions on tariffs, opening up of capital markets, liberalisation of foreign investment regimes, etc., in the context of an overall enhanced reliance on market mechanisms. The faith in the market as a panacea for all society’s economic ills has led critics to condemn neoliberal globalisation as ‘market fundamentalism’. Perhaps

much of the discourse on globalisation is an alibi for neo-liberal policies for which “there is no alternative” (TINA). The Third world nation-state plays an active and contradictory role in neo-liberal globalisation. It is made to propagate the ideology of neoliberalism because of TINA; dictates of imperial powers also constrain it because it is the periphery of international order.

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3.7 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1

- 1) The ‘Fourth Estate’ refers to the media, the other three pillars being the organs of the government, namely, the legislature, executive and the judiciary. The media have a right and duty to check the estate to report truthfully about government misconduct and expose abuses of public authority.

Internet & Social Scenario

- 2) The key feature of media in the post-Cold war era has been the rapidity of information throughout the world. Increased information flows, rapidity of transmission and transparency are characterised, among other things, the contemporary world. Over the years, news anchors, reporters, photojournalists, and other media actors in humanitarian crises have become a common occurrence.
- 3) The media coverage of human rights violations is likely to prevent violations by exposing the violators. News coverage of human rights shapes public opinion, affects foreign policy and serves as an informal means of documenting abuse. The globalisation communications system can provide human rights groups with information assistance and support in their crusade against oppression. Human rights activists and non-governmental organisations can use global media to publicise human rights violations to bring about behavioural change among the perpetrators.
- 4) Article 10 of the Universal Declaration of Human Rights (UDHR), 1948 states that everyone has the right to freedom of opinion and expression: this right includes the freedom to hold opinions without interference and seek, receive, and impart information and ideas through any media and regardless of frontiers.

Check Your Progress 2

- 1) We live in a period of constant change. One root of this change is technology, another source of knowledge and information. This Internet has emerged as a very important tool for communication and dissemination. It can be used to have more information about Human Rights and connect to others with similar interests. NGOs can be used for networking and fast communication with people. The Internet provides an environment where these changes constantly occur, enabling new social realities to emerge.
- 2) Terrorists and fundamentalists can use the Internet to propagate hate and violence by exploiters to use children as sex objects and vested interest to practice discrimination.
- 3) Information and Communication Technology (ICT), one among many tools, helps secure broader and lasting availability of world information resources, which the industrial society has grossly overlooked. Its transmission rules don't follow consumerism, but it might greatly enhance the digital environment if it adopted those rules. To fully exploit ICT for creating local and relevant content, people need far wider skills than simple web page creation. To sustain an information society, adequate attention needs to be geared towards intellectual and human requirements, capabilities and values. Learning how to apply ICT is necessary to better one's life. In a few decades, there have been advances in the general application of ICT, and some societies have developed a notably superior ICT infrastructure. A basic ICT infrastructure is one of the requisites for interaction, though it does not necessarily mean that each adult should be equipped with all the devices in existence. But access to and use

of ICT should be autonomous, voluntary and natural in the first place. The idea of building an overall knowledge-sharing instrument at the initiative of a single authority should be avoided.

Check Your Progress 3

- 1) The international human rights movement is an integral part of globalisation. Globalisation draws people more closely into global networks than ever before. Both globalisation and human rights claim to be universal ideas. However, each one of these universalising processes evokes resistance. Globalisation has inbuilt tendencies to shift decision-making processes away from governments and peoples to the globalisation of economic institutions and transnational corporations that have only a negligible interest in the human rights of people in the developing world. Richard Falk identifies two forms of globalisation that operate simultaneously: “globalisation from above” and “globalisation from below”. While the former is imposed from the outside and is controlled and led by transnational corporations (TNCs) and international financial institutions, with states facilitating the process, the latter is local at grassroots and enjoys broader mass support as it mobilises global civil society. While globalisation from above is inherently homogenising and hegemonic in its tendencies, globalisation from below is essentially pluralistic.
- 2) The politics of human rights as distinct from politics for human rights is observable at the international level. Human rights at the latter level have become the function of power dynamics. Powerful states did not care for the UN when they perceived that it was not used to them. They took unilateral actions in the realm of international relations, impacting very gravely on the state of human rights, besides other areas. On the other hand, the growing activism of non-governmental organisations (NGOs) has led to domestic social and political struggles. NGOs are keen on building a culture of human rights from below, and this globalisation is a product of local agency rather than global hegemony. Focusing on grassroots empowerment and education, NGOs have become agents of change. NGOs often construct their universalism that conforms to those advocated by transnational networks.
- 3) The neo-liberal idea stresses domestic reduction in the government’s economic role, deregulation, privatisation and global reductions on tariffs, opening up of capital markets, liberalisation of foreign investment regimes, etc., in the context of an overall enhanced reliance on market mechanisms. The faith in the market as a panacea for all society’s economic ills has led critics to condemn neoliberal globalisation as ‘market fundamentalism’. In its neo-liberal global garb, global capitalism results in ever-increasing inequality, immiseration and alienation- ‘globalisation’s discontents. The instruments of neoliberal globalisation. The International Monetary Fund (IMF), World Trade Organisation (WTO) and United Nations Conference on Trade and Development (UNCTAD) have ensured its peripheral role.

Internet & Social Scenario

- 4) Human rights, trade and investment, has sought to analyse rules and policies to promote fairer trade that improves the enjoyment of human rights. The seven areas of particular relevance to human rights include:
- a) Agriculture
 - b) Government procurement
 - c) Intellectual property protection
 - d) Investment
 - e) Services
 - f) Social labelling for fair trade
 - g) Public morals and general exceptions to trade and investment rules.



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UNIT 4: ICTs AND WOMEN (ISSUES OF ACCESS AND EQUITY)

Structure

- 4.0 Introduction
- 4.1 Learning Outcomes
- 4.2 Gender Issues in ICT
- 4.3 Women's Access to ICTs
 - 4.3.1 Strategies for Gender Equity
- 4.4 Benefits of ICTs for Women
- 4.5 Let Us Sum Up
- 4.6 Keywords
- 4.7 Further Readings
- 4.8 Check Your Progress: Possible Answers

4.0 INTRODUCTION

By definition, Information and Communication Technologies (ICTs) are a diverse set of technological tools and resources to create, disseminate, store, bring value- addition, and manage information. Traditional ICT tools such as television, radio and the telephone have proved their effectiveness in promoting development in marginalised areas. The emergence of computers, the Internet and wireless communications technology, and powerful software for processing and integrating text, sound and video into electronic media comprise modern ICTs. The spread of the global electronic network of computers popularly referred to as the Internet and mobile connections, have generated an unprecedented global flow of information, products, people, capital and ideas. It is the fastest-growing industry globally, and it is poised to become the largest in the world. The ICT revolution impacts economic and social conditions around the world, cutting across geographical locations and state of development of countries around the globe. ICTs are also proving to be a vital tool in helping to link new civil society networks around key issues, from global warming to women's empowerment.

Despite the vast opportunities for economic growth and social development offered by ICT, there is a negative aspect. ICT may further widen the gap between developed and developing countries, between the rich and the poor and between those who know how to use the new technologies and those who do not. The digital divide in access to ICT between the developed and developing world results from various factors, including poverty, lack of resources, illiteracy and low levels of education. In many societies, women are the most deprived, with the least access to resources and little control over decisions affecting their lives. For this reason, women are on the wrong side of the digital divide, with limited access to and control over ICTs. This concern has led the United Nations and other development organisations

worldwide to work cooperatively with developing countries to build “digital opportunities” to foster sustainable human development and reduce poverty.

The focus of the present Unit is to examine women’s issues in accessing and making use of ICTs for their advancement in society as a whole.

4.1 LEARNING OUTCOMES

The world is in the midst of a knowledge revolution. It witnesses the opening up of entirely new vistas in communication technologies, which are indeed revolutionary in nature. ICTs have the potential to enhance capabilities and create a new types of economic activities and employment opportunities and thus enhance the quality of life. Besides that, it leads to enhanced participation of citizens in diverse areas of social life. However, society’s technological, economic, and social development is possible through the skilful use of ICTs. How women are placed in terms of equity and access to technologies in ICTs lead knowledge society is the focus of this Unit.

After reading this Unit, you will be able to understand:

- The gender divide within ICTs and its implications;
- The gender disparity which exists in equity and access to ICT; and
- The potential benefits of ICTs for women and the strategies for achieving it.

4.2 GENDER ISSUES IN ICT

ICT is for everyone, and women have to be equal beneficiaries of the advantages offered by the technology, products and processes, which emerge from their use. Undoubtedly, ICTs have opened up new opportunities for women to communicate and share information. The services provided by ICTs have allowed women greater access to information for their productive and reproductive tasks and for organising and expanding their local organisations, networking and linkage building, locally and internationally.

While the potential of ICTs for stimulating economic growth and socio-economic development, and effective governance is well recognised, the benefits of ICTs have been unevenly distributed within and between countries. This uneven distribution is termed as ‘digital divide’. It refers to the differences in resources and capabilities to access and effectively utilise ICTs for development that exists within and between countries, regions, sectors and socio-economic categories.

While there is a recognition of the potential of ICT as a tool for the promotion of gender equality and the empowerment of women, grave inequality exists in terms of accessibility of ICTs based on gender identity. An insufficient number of women access and use ICT compared to men. Initially, the gender divide was identified in 1995 by the United Nations Commission on Science and Technology for Development (UNCSTD). The Commission identified significant gender differences in access levels to, control of and advantages accruing from a wide range of technological developments.

Analysis of gender issues in ICTs builds on previous gender analysis of technology. History proved that technological developments are not value-

neutral. They are socially constructed and thus have differential impacts on men and women.

Women’s capacity to exploit the potential of the new ICT as tools for empowerment is constrained in different ways. Some of these constraints are linked to factors (such as technical infrastructure, connection costs, computer literacy, language skills etc.) that affect men and women alike. Still, due to the vast existence of discrimination that persists in society, the disadvantages are exacerbated for women. Thus besides technological infrastructure, the socially constructed gender roles and relationships play a crucial role in determining the capacity of women and men to have access to ICTs on equal terms.

Do You Know? 2

Advocacy for gender issues in information and communications technologies first gained a foothold during the Fourth World Conference on Women in Beijing in 1995. Women’s organisations successfully lobbied to recognise the need for women to be involved in decision-making regarding the development of new technologies to participate fully in their growth and impact. The recommendations in the Platform focused on increased access and participation of women to expression and decision-making in the media and information and communication technologies to overcome negative portrayals and stereotypes of women in media and communications.

www.wigsat.org/malcolm.html

Economic and other market factors also play a crucial role. Historically, the isolation of women from the mainstream economy and their lack of access to information because of societal, cultural and market constraints have led them to become distant from the global pool of information and knowledge. This distance is reflected in the levels of empowerment and equality of women compared to men. Thus the capabilities of women to effectively use ICTs for their advancement is dependent on many social, economic and structural factors, including education, literacy, geographic location, social class etc.

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. Discuss amongst yourselves the progress and challenges in transforming gender relations in ICT dominated contemporary society.

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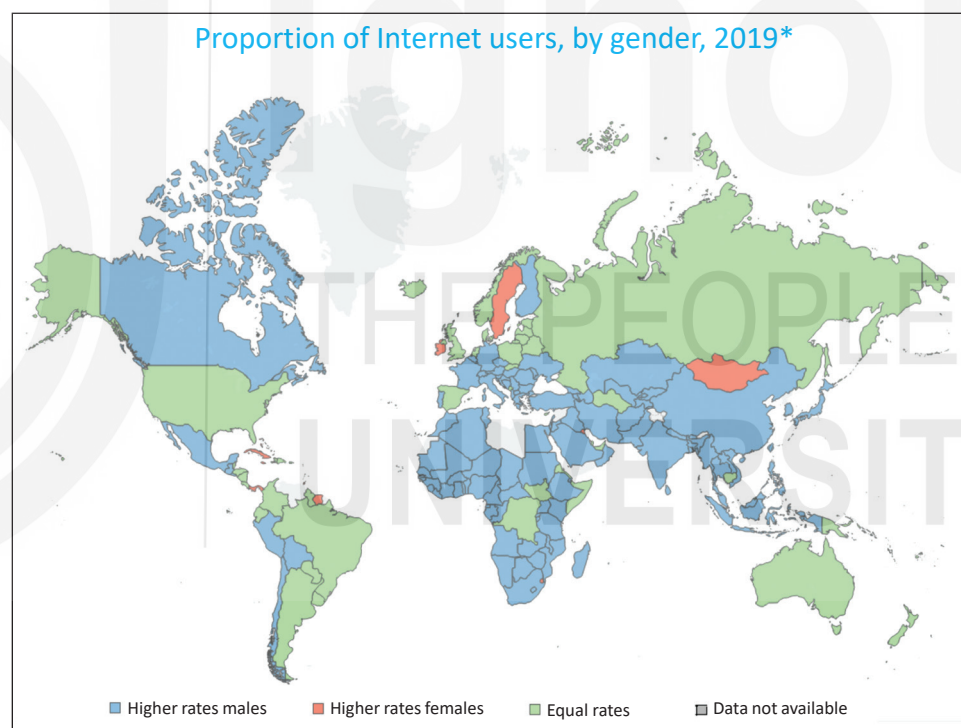
4.3 WOMEN’S ACCESS TO ICT

From the discussion in the preceding section, we could gather that access to ICT is typically divided along traditional lines of unequal distribution of benefits of development, resulting in unequal access that has become known

as the ‘digital divide’ or ‘digital exclusion’. The digital divide reflects both old socio-economic and political divisions exacerbated by the introduction of new ICT and new divisions created due to the nature of the latest ICT. Women are at the deepest end of the digital divide has been the central message of gender advocates working in the field of ICT.

It is a hard truth that most of the poor are women, and they experience vulnerability and powerlessness to a much higher degree than men. Therefore, equitable access to ICT technology and the autonomy to receive and produce the information relevant to their concerns and perspectives are critical issues for women. Women’s access to ICTs and control of them (or lack thereof) is dependent on many factors. Factors such as gender discrimination in jobs and education, social class, illiteracy and geographic location (urban or rural) influence women’s access to ICTs or any other sort of modern communication system. Let us see some of the main constraints women have regarding accessibility to ICTs.

The sophistication of any ICT infrastructure introduced into any environment becomes meaningless if women do not have the skills to operate the system and use it to their best advantage.



Source: <https://itu.foleon.com/itu/measuring-digital-development/gender-gap/>

Infrastructural Constraints: The potential of ICTs for women depends on their levels of technical skill and education and is the principal requirement for accessing knowledge. The Internet, the fastest-growing category of contemporary ICTs, is linked to literacy. Internet technology is foreign, with English being the predominant language, which becomes a handicap.

There is no access to more and higher education without basic literacy, much less to ICTs. The challenge of illiteracy must be overcome before women can benefit from ICTs. Women have less time to learn because of heavy domestic chores and other socio-cultural factors. Increased female enrolment at the primary level will enhance female participation in higher

education, which enhances female participation in technological education. As a result, more women could be benefited from the new avenues created by ICTs and hence become empowered.

Necessary interventions are carried out, especially by the government, and the NGOs can lead to skill development and rising education levels among women. It could be done by imparting technical education on the use of ICT as part of both formal and informal educational systems and initiating distant-learning and vocational courses.

Locational Disadvantages: There is a definite urban bias in ICT access and use by women. Access to IT education and training is highly skewed towards urban-centred, English-speaking masses with a comparatively higher socio-economic status. Infrastructure is concentrated in urban areas. If technologies are made that have an urban bias and high cost, few women would have access. Better Internet connectivity is available within urban areas, while most women reside in rural areas. Simply by being in the majority in rural areas, women have a small chance of accessing new technologies.

[For a detailed and generic discussion on Internet access and digital inequality, refer to Unit 3 of MNM011 - Issues and Participation of ICT]

Economic Constraints: The new technology comes at a financial cost which hinders its penetration to the individual and sometimes even at the community level. The problem is even compounded because poverty and lack of economic power are borne more by women than men. They have little control over the household income and do not have the decision-making power to invest in these technologies. Women are less likely than men to own radios and TV or access them when they want. Access to the Internet is through an Internet Service Provider, or an Internet café is expensive. Further, there are associated physical and infrastructural requirements such as electricity, mobile ownership, and quality of 2G/4G connectivity, which are unevenly distributed and add to the cost of initiating knowledge networking.

Structural Constraints: Women's access will be limited if the information centres are located in places that women may not be comfortable frequenting. Specifically, access for rural women will depend critically on where the technologies are located. To facilitate access for women from various classes and sectors, ICTs will need to be located in places that women frequent and have open and equal access, such as health centres, women's NGOs, women's employment centres, and perhaps even places of worship. In this context, location also pertains to the practical, specific kind of information that women require due to the time constraints they face. Establishing telecommunication centres in local communities is also a potentially useful strategy if gender obstacles to access to them by women are removed into account. Information production and distribution strategies will also be an important consideration to make the most of each point of access. They will need to be flexible, mixed media and multi-technology systems to effectively reach the greatest number of women.

Social and Cultural Factors: Many women continue to be intimidated by the Internet and its technology, finding it more of an area best left to

the men. This stems from social conditioning and the fact that many young women are not encouraged to take up science subjects in school (especially in rural areas) or feel that it would be an area in which they could not excel. This is an aspect of gender socialisation. Similarly, limited awareness of the full range of opportunities afforded by ICT other than simple passive access to information; lack of understanding as to how ICT can be used actively to disseminate data, lobby, participate in and influence decision-making processes, coordinate community activities and collaborate with other NGOs at local and regional levels are often cited as barriers facing women.

Think It Over 1

What are the constraints that women have regarding the accessibility of modern information and communication technologies?

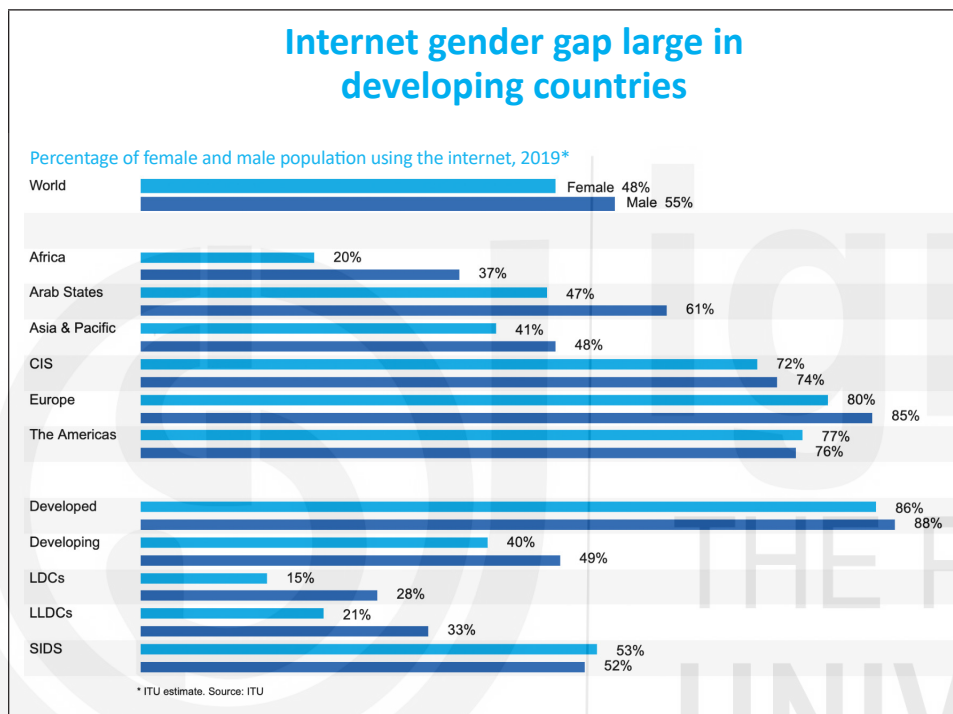
4.3.1 Strategies for Gender Equity

To ensure gender equity with regard to access to and use of ICTs by women and men, different areas need to be addressed. Interventions have to take place simultaneously at different levels. Development agencies should assist national policymakers and implementers in developing countries in elaborating and implementing gender-sensitive ICT policies, strategies, and activities through policy advice, capacity building, and financial support. (Hafkin 2001)

- Creating a conducive policy and an enabling environment: Though the need for policies on information and communication technologies have been realised, very few policies promote gender equity in using ICT. Gender concerns have to be considered in policy content and the process of policy development.
- Improving women's access to ICT: To ensure women's access to ICT, there is a need to increase the availability of communication in presently underserved areas. Since women concentrate in rural or semi-urban areas. Emphasis has to be put on common use facilities. The most sustainable strategy is a market-driven, locally initiated service model. Internet services could be added to existing communication services of phone shops, teleports, public call offices etc. Public access to communication facilities should be provided in or near institutions that women frequent, such as schools, markets, health clinics or post offices. Mobile units could also be used to provide communication services to underserved communities.
- Improving girls' and women's access to education and training: The most important factor in increasing the participation of women and girls in ICT is to offer them more education at all levels, from literacy to scientific and technological education. Women and girls need to be prepared for various roles in ICT as users, creators, designers and managers. Efforts have to be made to increase the number of girls and women studying ICT-related subjects in formal and outside schools. This includes reviewing training methodology and contents. The possibility of scholarships helps to encourage women to enter science and technology-based subjects. Women outside the formal schooling

system and already part of the workforce should be given access to upgrading and retraining courses or the possibility to acquire new skills. Training providers should be encouraged to address a female clientele and develop appropriate training programmes specifically.

- Providing access to capital: Linking entrepreneurs to ICT requires education and training and the provision of finance. In this context, microfinance schemes are the most likely sources of capital. Managers of microfinance institutions need to be made aware of the viability of ICT-based businesses of women. The example of Grameen Telecom’s Village Phone Programme in Bangladesh illustrates how even the poorest, including women, can successfully set up ICT-based businesses.



Think It Over 2

How can the current uneven and unaffordable access to information by women be improved through ICT?

Regarding the Indian situation, the following recommendations relate to strategy and lines of action that will enable women to overcome the many obstacles they face and help guarantee them more equitable access to new and emerging communications technologies and electronic information sources (www.egovindia.org).

- Promote the access of women, girls and women’s organisations to new and emerging communications technologies and computerised information resources;
- Promote the development of computerised information resources on issues related to the advancement of women;
- Support the development of initiatives of women and citizens’ groups in the field of computer networks that promote the advancement of women and gender equality;

Internet & Social Scenario

- Support women and girls' access to training in using computer networks and promote a gender perspective in training and methodology in the field of new technologies;
- Promote equal access of women to advanced technical training and careers in computer communications;
- Promote and support the equal participation of women in international and national decision-making relating to the use of communications infrastructure and access to computer networks;
- Create content that reflects women's needs and voices; and
- Facilitate and encourage the involvement of women in technological innovation.

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. Discuss with your classmates what role NGOs, civil society organisations, and other networks play in creating equality for women and disseminating gender-related information.

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4.4 BENEFITS OF ICTS FOR WOMEN

Women can benefit from ICT in myriad ways. Let us try to list some of them here.

- Influencing public opinion on gender equality: Through ICT enabled information channels including radio, telephone, television and the Internet, awareness of gender equality issues can be raised and enhanced.
- Increasing economic opportunities for women:- Women have been limited from participation in many forms of economic life. ICTs help entrepreneurs reduce transaction costs and increase market coverage.
- ICTs for women's education: ICTs can provide women with useful information. Radio, television broadcasting, audio and video cassettes are used as supplements to print materials in traditional education. But now newer technologies such as audio and video conferencing, the Internet and e-mail are taking over.
- Encouraging women to know their rights and participate in decision-making:- Women remain vastly under-represented in national and local assemblies. ICTs have the potential to empower women by enabling them to participate in public discussions.

Engendering knowledge networks opens up avenues for women to freely articulate and share their experiences, concerns and knowledge with the possibilities of their further enrichment as the same pass through a gamut of network users. They are instrumental in helping women break from society's stereotypical structures, narrow outlooks, and the hegemony of male-dominated societal structures. Other benefits include objective

and targeted information flows, low communication costs, sharing best practices and solutions, opening up alternate communication channels with women, hitherto unreached or under-serviced, and accomplishing a deeper geographic penetration.

Through the use of convergence and hybrid technologies such as community e-mails, community radio broadcasts, telecentres, newsletters, videos, etc., women communities could overcome the constraints of seclusion, mobilise resources and support, reach out to new markets, and open up avenues for life-long learning.

Do You Know? 3

Gyandoot is an Internet project in the Dhar district of Madhya Pradesh, connecting 21 rural cyber cafés called Soochanalayas. Women can send complaints with the assurance of reply within a maximum period of seven days (www.gyandoot.net). Asian Women Resource Exchange (AWORC) is an Internet-based women's information network and service in Asia. AWORC develops cooperative approaches and partnerships to increase access to and explore ICT applications for women's empowerment ([HTTP:// www.aworc.org](http://www.aworc.org)).

Andhra Pradesh State Wide Area Network (APSWAN) is the backbone for the voice of women, data and video communication throughout the state of Andhra Pradesh. This network connects the state secretariat with 25 centres, including all districts headquarters town through e-mail and video conferencing. Women stand to enormously benefit from them as they now have the power to write directly to the Chief Minister, cross-cutting the hierarchical layers (Source: www.ap-it.com/apswan.html)

ICTs open up a direct window for women to the outside world. Information now flows to them without distortion or any form of censoring, and they have access to the same information as to their male counterpart. This leads to broadening perspectives, building up a greater understanding of their current situation and causes of poverty, and initiating interactive processes for information exchange. Further, such forms of networking open up alternate forms of communication to those offered by the conventional or the government-controlled media sources and therefore catalyses the empowerment process. The opening up of alternate forms of communication with the external world made the women more informed. They were empowered to realise that their real causes of poverty were not natural disasters but ineffective state governance mechanisms. Therefore, a link was established between bad governance and poverty - their first step to empowerment, as they were able to identify the causal loop to their poverty and the players involved.

New areas of employment such as telemarketing, medical transcription etc., have also opened up tremendous job opportunities for women. These jobs are underpaid and fall at the lower segment of ICT jobs; nevertheless, they open up avenues where none existed before. One of the most powerful applications of ICT in knowledge networking is electronic commerce. Electronic commerce refers to the selling of products and services online and the promotion of a new class of ICT-savvy women entrepreneurs in rural and urban areas. Women over time have learnt the advantages offered

by ICT and its potential in opening up windows to the outside world. This has put them in greater control over the activities performed by the— laying the foundation of entrepreneurship development.

The unrestricted flow of information through ICT processes opens up avenues for men and women to view each other differently. The sharing of views between communities living in different geographical and cultural spheres will lead to broadening views and changing mindsets over time. It is a fact that the horizontal level of communication has a greater impact than the vertical communication structures, and knowledge networking promotes the horizontal flow of information. Men may learn more about women’s productive roles in the wider economy in different cultures and regions and may become more willing to provide equal spaces to women. Removing this stereotypical mindset would undoubtedly be a big step towards women’s empowerment.

Do You Know? 4

India’s Information Villages at Pondicherry

Popularly known and showcased as best practice in ICT, this project was initiated by the M.S. Swaminathan Research Foundation (MSSRF) and NGOs in Pondicherry State in South India. It was initially undertaken for poor agricultural and fishing villages in South India. It involved the setting up information centres, with telephone facilities and internet services, in 9 villages in Pondicherry. The Information centres have databases from which women can access information on agricultural concerns, general hygiene, employment, and income-generating opportunities. At present, their databases, which women can access through their information centres, now include Entitlements to Rural Families, Grain Prices in the Pondicherry region, Information on Seeds and Fertilisers, Insurance Schemes, Integrated Pest Management in Rice Crops and Sugarcane crops, Directories of Hospitals and Medical Practitioners in Pondicherry grouped by specialisation; Bus/ train timetables covering the Pondicherry region and two nearby towns.

The success is attributed to its participatory and gender-sensitive processes, the transfer of technical skills to the rural community, and the close partnership of the NGOs in Pondicherry and the M.S. Swaminathan Research Foundation.

Source: Jimenez-Tan, Marion (October 2001), “Appropriating ICT For and By Women in Asia and the Pacific” APGEN-UNDP Paper Presentation for the Asia Pacific Regional Workshop on Equal Access of Women in ICT, Seoul, ROK.

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. How can ICT enhance women’s socio-economic and political development participation, leading to a knowledge society?

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4.5 LET US SUM UP

Despite advances in the ICT industry, the benefits of ICT have not reached most people. To a large extent, the traditional pattern of male and female attitudes towards technologies replicates itself in developing the new ICTs. ICT cannot be effectively used for the development of society as a whole and women especially, unless the crucial problem of the digital divide is addressed, not only between developed and developing countries but also in terms of gender, class, age, ethnicity, language, geographical location and physical ability. Women and girls must be explicitly included as beneficiaries of the 'ICT revolution' as a fundamental principle of equality and an essential element in the shaping, direction and growth of the 'Information Society. They must have equal opportunities to actively participate in ICT policy decision-making spaces and the agenda-setting processes, which shape them.

The focus of this Unit is on ICT and women. It discusses the main issues that concern women in the ICT based present-day development of society. It further discusses some of the strategies to involve women in the kind of development that takes place in contemporary society. One of the main strategies is to have a gender perspective in the national ICT policies.

How ICT can support gender empowerment is also discussed in this Unit. Suppose access to and use the new technologies is directly linked to social and economic development. In that case, it is essential to ensure that women understand the significance of these technologies and use them. If not, lack of access to ICT becomes a significant factor in their further marginalisation from the economic, social and political mainstream, both within their countries and the world. Without equal and full participation in ICT use, women will be left out from participating in the global world of the 21st century.

4.6 KEYWORDS

Civil Society: Civil society or civil institutions refers to the totality of voluntary civic and social organisations or institutions that form the basis of a functioning society instead of the force-backed structures of a state. Examples of groups in civil society include universities, non-governmental organisations, environmental movements, indigenous peoples' associations, organised local communities and trade unions. Civil society can be organised at the local, national and international levels.

Internet Café: It is a place where one can use a computer with Internet access free of cost or payment.

Information Society: It is a society in which the creation, distribution and manipulation of information or knowledge is a significant economic and cultural activity.

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4.8 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1:

1. Analysis of gender issues in ICTs builds on previous gender analysis of technology. History proved that technological developments are not value-neutral. They are socially constructed and thus have differential impacts on men and women. Women's capacity to exploit the potential of the new ICT as tools for empowerment is constrained in different ways. Some of these constraints are linked to factors (such as technical infrastructure, connection costs, computer literacy, language skills etc.) that affect men and women alike. Still, due to the vast existence of discrimination that persists in society, the disadvantages are exacerbated for women. Thus besides technological infrastructure, the socially constructed gender roles and relationships play a crucial role in determining the capacity of women and men to have access to ICTs on equal terms.

Check Your Progress 2:

1. To ensure gender equity with regard to access to and use of ICTs by women and men, different areas need to be addressed. Interventions have to take place simultaneously at different levels. Development agencies should assist national policymakers and implementers in developing countries in elaborating and implementing gender-sensitive ICT policies, strategies, and activities through policy advice, capacity building, and financial support.

Check Your Progress 3:

1. Engendering knowledge networks opens up avenues for women to freely articulate and share their experiences, concerns and knowledge with the possibilities of their further enrichment as the same pass through a gamut of network users. They are instrumental in helping women break from society's stereotypical structures, narrow outlooks, and the hegemony of male-dominated societal structures. Other benefits include objective and targeted information flows, low communication costs, sharing best practices and solutions, opening up alternate communication channels with women, hitherto unreached or under-serviced, and accomplishing a deeper geographic penetration.

UNIT 5: INDIAN DIASPORA IN CYBERSPACE

Structure

- 5.0 Introduction
- 5.1 Learning Outcomes
- 5.2 Defining Cyberspace
- 5.3 Understanding Virtual Community
- 5.4 Indian Digital Diasporas
- 5.5 A critical Overview of Literature on Indian Digital Diasporas
- 5.6 ICTs, Nationalism, Religious Diasporas
- 5.7 South Asian Digital Diasporas-Mobile (gadget) Generations
- 5.8 Let Us Sum Up
- 5.9 Further Readings
- 5.10 Check Your Progress: Possible Answers

5.0 INTRODUCTION

In this Unit, we will examine yet another aspect of interlinkages between diasporas, and this time we discuss connections between diaspora that happen ‘in cyberspace. As we have mentioned earlier, the globalised world has made it increasingly amenable for the use of telecommunication and digital devices, which make communications possible and communication that cuts across time and space. In that sense, digital communications are different from face to face communications which happen in the same physical space. In this Unit, we will try to understand what we mean by cyberspace and virtual community and whether such communities ‘are possible. We will then examine the specific case of the Indian diaspora in relation to the online and cyber world and what space they occupy, and how they articulate their sense of community through what”actions. In analysing these concepts and phenomena, we will be examining the relevant literature in this area.

5.1 LEARNING OUTCOMES

After completing this Unit, you will be able to:

- Define virtual community
- Have an overview of the history of the Indian diaspora and its relation to cyberspace
- Have an understanding of socio-cultural and economic issues at the intersection of the virtual and real in relation to diaspora online
- Begin to understand the implications of the Indian diaspora online.

5.2 DEFINING CYBERSPACE

David Whittle traces the concept's origins to Alvin Toffler's *Future Shock*. Whittle writes that although the author of the science fiction work *Neuromancer* William Gibson is most often cited as the writer who coined the term cyberspace, "Gibson himself reportedly credits the concept to John Brunner, author of *Shockwave Rider*," who in turn credits Alvin Toffler as the author who introduced the concept of cyberspace (Whittle, 1996).

Box 5.1: What is Cyberspace?

In the second edition of *The World Wide Web Unleashed*, John December and Neil Randall offer the following definition of cyberspace:

Cyberspace refers to a person's mental construct from experiencing computer communication and information retrieval. The science fiction author William Gibson developed this term to describe the visual environments in his novels. Gibson described worlds in which computer users navigate a highly imagistic global network of information resources and services.

The term cyberspace is used today to refer to the collection of computer-mediated experiences for visualisation, communication, interaction, and information retrieval (1995: 328).

Much of the confusion and uncertainty surrounding the notion of whether or not there is a community online — whether or not "virtual communities" occur — has to do with the "cyberspace" fantasy and the false dichotomy between "real life" (what cybernauts refer to as "RL") and "virtual life". The cyberspace metaphor leads us to believe that our interactions online are separate from our everyday lives. Technically, all we are doing online is transmitting messages with the aid of a modem and a telephone connection. And yet, we do not think of a telephone conversation as not being real. Perhaps the reason we think of cyberspace as separate from our everyday lives and interaction with with-body and as "unreal" has to do with the fact that cyberspace as a concept is rooted in science fiction. In futuristic literature, cyberspace is a physically inhabitable space. It is an "electronically generated alternate reality, entered by means of direct links to the brain." There is a body/soul split.

Following the literary notion of cyberspace, we think of our transmission of messages via the Internet in spatial terms. Yet, something about communicating online gives us a sense of multi-dimensional space. There seems to be something about words and images that pop on and off computer screens - as when we send and receive messages and view websites, that leads to the illusion that there is some kind of life on the other side of the screen. Almost as if there is a "land" on the other side of the glass, from which something or somebody "talks back". As William Gibson, the science fiction author, attributed with the coining of the term "cyberspace" writes, people who use computers and play computer games "develop a belief that there's some kind of actual space behind the screen, some place that you can't see but you know is there."

This illusion of space beyond the computer screen is perhaps the best and only “evidence available of the actual existence of cyberspace itself” (Whittle, 1996:6). Sandy Stone points out that “cyberspace” as described in literary fantasies does not exist. In science fiction, cyberspace is a physically inhabitable, electronically generated alternate reality, entered by means of direct links to the brain - that is, it is inhabited by refigured human “persons” separated from their physical bodies, which are parked in “normal” space. The physical laws of “normal” space need not apply in cyberspace, although some experiential rules carry over from normal space; for example, cyberspace’s geometry is Cartesian in most depictions. The “original” body is the authenticating source for the refigured person on cyberspace: no “persons” exist whose presence is not warranted by a physical body back in “normal” space. But death in either normal space or cyberspace is read in the sense that if the “person” in cyberspace dies, the body in normal space dies, and vice versa (Stone, 1991). However, as we know it today, cyberspace is a social environment “enabled by and constituted through communication technologies” (Stone, 1991).

5.3 UNDERSTANDING VIRTUAL COMMUNITY

At what point in our use of interactive computer systems do we come to believe in “virtual communities”? Do all people who interact on email lists use internet relay chat systems and web-based multi-user systems consider themselves part of some sort of community that exists “in cyberspace”? It is suspected that it is when there is some strong effective and/or material “real life” leak, spill-over and connection that the people who use systems of interaction online begin to feel the existence of some sort of “community”.

What then is a “community” in cyberspace? In whose imagination does this community exist? How is it different from the Real Life community? How is an online “culture” different from a Real-Life culture?

While Rheingold’s definition suggests something like a group of people gathered around a village well, Stone’s definition suggests separated soul-mates “meeting” beyond the human body, overcoming limitations of physicality, in these cyberspatial “passage points”.

Box 5.2: Some Definitions of Virtual Community

Howard Rheingold is credited with publicising the notion of Virtual Community. This was a concept carrying much hype - yet also much discussed and argued about in the early 1990s when the Internet became more available for commerce as the “world-wide-web” with increased access and used worldwide. Simply put, we can say that the term virtual community refers to individuals with some common goals and interests networked through various online technologies. A commonly cited proponent of virtual communities, he defines virtual communities as: “social aggregations that emerge from the Net when enough people carry on... public discussion long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace” (Rheingold, 1993:5). Another scholar defines virtual communities as incontrovertibly social spaces in which people still meet face-to-face, but under new definitions of both “meet” and “face”. [V] virtual communities [are] passage points for

collections of common beliefs and practices that unite people who were physically separated” (Stone,1991). Therefore, “space” in cyberspace is ‘predicated on knowledge and information, on the common beliefs and practices of a society abstracted from physical space” (Jones, 1995).

Despite the fact that these definitions above appear to romanticise virtual interaction implicitly, they are not wrong in their descriptions of a community online. Creating and feeling a sense of community online does depend on the continuation of “public discussion long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace”; on “collections of common beliefs and practices”; and “new definitions of both ‘meet’ and ‘face’”. Virtual communities are indeed “social aggregations that emerge from the Net” and “passage points for collections of common beliefs and practices of a society”. However, while the nature of personal relationships is no doubt different online than face-to-face, I would not say that they are completely abstracted from material reality.

In his article *Why We Argue About Virtual Community*, Nessim Watson finds fault with the use of the phrase “virtual community.” He argues that using the label “virtual” community for groups of people interacting with each other online makes it seem as if the community “is not actually a community.”

“The distinction between “virtual” community and “real” community is unwarranted. The term “virtual” means something akin to “unreal” and so the entailments of calling online communities “virtual” include spreading and reinforcing a belief that what happens online is like a community but isn’t a community. My experience has been that people in the offline world tend to see online communities as virtual, but participants in the online communities see them as quite real (Watson, 1997:129).

Watson admits that communities online are different from offline communities, but he argues that they are communities. Watson also examines applying or denying the community metaphor for groups of people interacting online. He discusses Neil Postman’s critique of the virtual community centred around the notion that online groups enable the separation of the “real” from the “virtual”. Postman objects to the use of the term community within online contexts because online groups “do not contain the stake that exists in “real” communities.....they lack the essential feature of a common obligation. More accurately, online communities lack the consequences of not meeting or participating in the common obligation of most communities” (Watson, 1997:122).

The statement that online networks do not stake in real communities is contestable. As we indicated earlier in this chapter, communities are made up of group practices, discourses, structures, hierarchies; virtual communities (online networks) are embedded within these power structures and ideologies. While characterising Postman’s notion of community as noble, Watson dismisses the criticism of virtual community as “nostalgic”. He suggests that a closer look at how online interaction forms and transforms community structures might help internet scholars “make an important contribution to the improvement of democratic representation”(Ibid).

Watson's discussion on the virtual community is necessary to intervene in the ongoing debate about community existence online. His study of the online group Phish.net sheds light on many issues relating to the formation and structuring of online communities. However, Watson's optimism with regard to virtual communities and possibilities for restructuring power relations and the revitalisation of democracy is problematic, as is Postman's view regarding community and obligation is nostalgic. Personal, political, social and economic obligations are a very important part of community life. Neil Postman's objection to using community while describing online groups might suggest that the discursive formations online cannot significantly change our material reality since the online collectivities lack a sense of obligation to the real community. Watson points out that even today's "real" communities lack the sense of common obligation that Postman is referring to. According to Watson, Postman's work compares what we call community today to the community humans had during the nineteenth-century era of cottage industry and small village life (Ibid:123).

Therefore, Watson goes on to argue that the term, as Postman uses it, is nostalgic, since so little of the present-day world fits the metaphor" (ibid). However, as those of us who have lived online connected to various digital diasporic communities can attest, the term "community" in relation to online groups of diasporas is applicable since we see that they do indeed have a common obligation to the "real" community that they are part of, whether or not they admit to this obligation or connection. While mainstream ideology behind the whole "global information highway" encourages the formation of niche virtual communities, where the participants try to distance themselves from the problems of "their lagging and disadvantaged countrymen, regions, states," (Schiller,1995) it is also a fact that social relations and interpersonal exchanges within virtual communities cannot escape their connection with "RL" political, economic, social and cultural material practices. Thus we see that Watson's and Postman's views on virtual community highlight an existing binarising of "virtual" and "real" based on utopian and dystopian views of being online. Written in the early years of emergence in the virtual community, these discussions reveal the assumptions behind how the community is viewed and how the newness of the use of any kind of technology leads to debates that keep drawing us back into technological determinism. More than a decade after the Internet became globally available (at least in theory), now, we can see these arguments constantly surfacing in all areas of discourse - in business, in academia, in activism, in non-governmental organisations and so on. However, many of us do not subscribe to the binary in practice.

Those of us located in a certain socio-economic class with access to language, education, skills and material necessary to be connected, in addition to being in work-environments that give us no choice regarding whether we use internet connectivity and access online available information and social spaces or not, have begun to take the community formations online for granted. As easily as the radio, television, telephone, and mobile/cell phone have been necessary for our daily functionality, online has also become a part of our everyday practice. For instance, where my father's generation living in diaspora (in my childhood), we would as a family connect to All India

Radio via radio as they sipped their early morning coffee, today we connect with Indian news via online environments through wireless networking each to their laptop, or through satellite TV in front of a commonly shared screen. In all these instances - our offline/unconnected social practices result in further discussion in face-to-face environments and continuing community formations in physical spaces.

The celebration of freedom and the lack of boundaries on cyberspace assumes that cyberspace is a possible Utopia for the privileged classes, separate from the reality of everyday suffering and deprivation that the less privileged of the world have to endure. Increasingly, cyberspace is marketed as a wonderland where gender, race and all such markers of otherness will be erased and melted down as we transform ourselves into texts and images online. Thus the binary that positions virtual community as not real (implicit in both utopian and dystopian views) and as distant from the offline reality every day also misrepresents. Further, implicit rhetoric assumes that community formation starts with the individual and is rooted in the individualist rhetoric that pervades the technological imaginary. The Utopian and Dystopian visions of cyberspace and online technologies overlook that the individual is embedded within the practices, structures of power, and discourses that make up the community. Nancy Baym writes, "Although in many ways research has become more sophisticated, the continuing debates over the nature and worth of the virtual community belie an ongoing presupposition that there are two types of communities, one authentic and the other virtual" (Baym, 1995).

Whenever we speak of online activity, the split between the "real" and the virtual is always implied. To overcome the virtual life vs real life binary, Don Slater suggests that, "What is required, therefore, is a move from asking about "the nature of online relationships and identities," to asking the entirely different questions: "What do people do online?" (Slater, 2000:539). Slater also calls for "more rich and integrated accounts of the social relations" occurring in online venues arising from "deep ethnographic studies of particular social groups with real histories" (Ibid). Differences exist between a purely textual email interaction and sharing physical and temporal space talking to someone in a coffee shop, just as differences exist between speaking on the telephone and speaking face-to-face. But we never suggest that speaking on the telephone is "not real."

Instead of asking whether online interaction is "real", it is about time we shifted our focus, then, to questions regarding group norms and standards, structures and traditions that create a sense of inclusion and/or exclusion and to see how these are enacted in virtual environments. Given the supposed separation between online and offline, what about online social interaction that moves offline? What impact does ongoing, regular offline contact have on virtual interaction between the same people? Baym's research, along with a number of others dating back to Rheingold, referenced close relationships formed via virtual channels, which moved into other mediated channels (telephone conversations) or face-to-face meetings for at least a portion of computer-mediated communication users.

Virtual communities of diasporic communities thus are material and discursive, with very real material consequences. Further, they represent a

social and digital space of cultural representation and a contact zone of cultural contestation. Such a notion stems from Mary Louise Pratt codification. In her influential book *Imperial Eyes: Travel Writing and Transculturation*, Pratt defines her contact zone as “social spaces where disparate cultures meet, clash, and grapple with each other, often in highly asymmetrical relations of domination and subordination” (Pratt, 1992:4). To be more specific, a contact zone refers to “the space of colonial encounters, the space in which peoples geographically and historically separated come into contact with each other and establish ongoing relations, usually involving conditions of coercion, radical inequality, and intractable conflict” (Ibid: 6). The notion of a contact zone is originally predicated on the unequal power geometry of colonial encounter that usually involves white Westerners and non-Western cultures in the officially bygone era of colonisation. Moreover, judging from Pratt’s rigorous analysis of travel writings produced by Euro-American travellers to South America and Africa in the age of Western colonial expansion, there was much space for the Others’ voices in the contact zone.

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 do you understand about cyberspace?

.....
.....

2. In what way is the space of an online communication world different from real physical space?

.....
.....

5.4 INDIAN DIGITAL DIASPORAS

Diasporic communities the world over, of course, seized upon the opportunity to connect globally to form various virtual communities. The question then is, what is the implication of being able to form such connections and of being able to sustain them via online networks. What sorts of cultural practices are reproduced and sustained. What sorts of histories and memories are captured and stored. How are digital diasporas re-envisioning cultural, social and religious pasts and futures? What might be the implications for future generations of the nations that such digital diasporic communities claim “homes.” In addition - how do the technological interfaces available via internet-based digital media shape the reproduction of such identities and community practices. Benedict Anderson wrote of *Imagined Communities* (1991), shaped through print capitalism. As suggested by Frederic Jameson, what we see now in digital diasporas is an extension and transformation of such a logic - multiple and nuanced- the logic of post-capitalism. Further, Alvin Toffler has also predicted the formation of niche communities, which are in essence what we see online in digital diasporas; databases, categorising and labelling within existing and evolving grids.

Amit Rai (1995) argues that those online communities created by immigrants and other diasporic populations reproduce the same tensions and ideologies visible within diasporic communities, not online (that is, the communities in real life). He does not see them as “oppositional” formations in a sense suggested by writers who talk about the “radical democratising potential” of cyberspace. In his article, he suggests that the physiological structure of hypertext is visible in these online communities. While one strongly doubts the “radical democratising” potential of hypertext or the electronic medium in general, one does believe that the form of hypertext might make possible different types of textual interaction, at least for the privileged few who have access to the medium.

Amit Rai (1995) is critical about the possibility that these spaces can “inaugurate liberatory practices of the self”, contrary to what some celebratory rhetoric may suggest about the possibilities offered by internet communication. His article discusses how these spaces, while they may have potential (and may not) for democratisation, can equally be used to propagate “reactionary politics”. Whether or not the discourses are exact replays of real-life interactions, the limit of this discursive community indeed lies within the actual with-body people who inhabit real-life diasporic spaces and who have access to the Internet. The discussions and narrative threads are wholly the product of the kind of people who are able to get online. The nature of an online community depends on the participants and the discourses allowed by the community participants. To a very large extent, the nature of online discussions is a reproduction of interaction politics within real-life communities.

It is important to remember that virtual communities are disembodied, but nonetheless, they are discursive reproductions of real-life societies and imagined communities. We have not all dispersed into pure cyberspace despite the illusion that there is only pure text and no human form from which the text emanates. We are not disembodied beings, and even when we are interacting within virtual communities, we are still very much within discursive economies and hierarchies - co-created by us and still within hegemonic structures of social, economic and political interaction. We are talking about “discursive subjects” identifiable by the nature and content of their texts.

However, it is not suggested here that there is no difference in the way people interact within virtual and real communities. The fact that we interact in pure text and not face-to-face confuses and complicates the interactions in interesting ways. The discursive content of the discussions on these EBBs (Electronic Bulletin Boards) and email lists may not always be very different from discussions offline groups (except perhaps that they use computer-slang now and then), but the complexities of the interactions and subject positions can be suppressed due to the unavailability of nonverbal cues and the possibilities of making a disapproving or resistant silence “heard” online.

Virtual communities appear disembodied, but nonetheless, they are discursive reproductions of real-life societies. In the case of virtual communities formed around a certain national, ethnic or regional identity,

imagining these communities spills beyond cyberspace into RL in ways that are slightly different from the RL overflow from other virtual communities.

5.5 A CRITICAL OVERVIEW OF LITERATURE ON INDIAN DIGITAL DIASPORAS

This section will do a quick overview of the existing literature and suggest future directions for studying the phenomenon and issue of Indian Digital Diasporas.

While there is a large body of mainstream literature on topics related to Indians and 'IT' (Information Technology), Indians in cyberspace and 'the digital divide' mostly from development-related perspectives - these articles do not engage the implications of digital diaspora as a socio-cultural phenomenon. However, such writing is useful in understanding the extent to which the Indian diaspora is spread out in digital environments. Much of this literature relates to business applications, software design and production for businesses worldwide. Some concerns relate to programming labour for businesses, access to IT-related jobs for the Indian populations, and issues of access from India to the global commercial centres of the world. Thus the discursive socio-cultural spaces that internet spaces enable, or how the design of information technologies and cultural spaces enabled through such interfaces shape the possibilities and impossibilities for the emergence of marginalised subjectivities, are not adequately examined in such writing. However, bodies of literature related to India and the IT phenomena that draw connections between Indian (and South Asian) diasporas and cyberculture exist. These examine socio-cultural aspects of online activity (see Rai, 1995) and discursive formations online in relation to subjectivities that emerge in digital diasporas and relation to issues such as 'voice and voicelessness', 'marginalised populations' and 'subaltern counter spheres' addressed by cultural studies, postcolonial theory and feminist scholars. Thus, south Asian nationalist identity formations online and economic and cultural globalisation processes through the spread of MNCs (multinational corporations) are important factors shaping Indian digital diasporas.

When examinations of the Indian digital diaspora is limited to examining IT in relation to a privileged minority that has material and cultural access to IT and is thus invested in the maintenance of current manifestations of cultural and economic structures connected with processes of globalisation, we lose sight of its implications for globalisation and interdependence of development and elevation of poverty in rural and urban India. For instance, in the case of India, only 25 per cent of workers are engaged in service occupations - and it is these 25 per cent that directly benefits from IT-related progress or work. Rural livelihoods such as agriculture handloom weaving - still forming a large portion of the workforce and skills in India are not adequately supported through online information and design, if at all. Examining just the range of workers involved in servicing the global IT industry allows researchers and practitioners to be celebratory about Indian IT successes and boast of 'progress' by pointing to facts and numbers that indicate that countries such as India have a larger number or the same number of information workers as the developed nations of the world. They

justify their concern with only those ‘millions of information workers who are ‘mostly urban and educated, living lifestyles similar to information workers in Silicon Valley, Tokyo or London’ (Singhal and Rogers, 2001).

As Vinay Lal points out, such a perspective works for ‘Internet elites’, whose ‘mobility in cyberspace furnishes them with opportunities to work within the world of international finance and business; like the elites of the First World, they are beginning to live in time, and space poses no barriers for them ...The time-space compression that cyberspace typifies only works to the advantage of these elites’(Lal, 1996b). Thus from a perspective unquestioning of a westernised patriarchal and urbanised transnationalism that works for the very few culturally and materially privileged populations of the world, it is possible to see IT and South Asia (especially India) as an unproblematic success story.

On the other hand, much of the available literature studying Indian digital diasporas is limited to studying Indians/South Asians in the digital diaspora as discursive formations online, describing the socio-cultural aspects of online formations of various South Asians both located geographically in South Asia and living in the diaspora outside of South Asia. Much of this latter body of literature focuses on the various religious diasporic formations online, discussing Hindu Diaspora online, Sikh Diaspora, Eelam online, Muslim diaspora, etc. This literature is important - just as the literature that examines Indians and the IT industry. Both bodies of literature shed light on how the Indian digital diaspora is manifested.

However, while such literature does acknowledge the role of gender in national formations online, it is mainly concerned with the analysis of existing diasporas online. Much of this literature focuses on textual analyses, with little attention paid to the applied problem of designing e-spaces. Most of these are based on analysing online spaces as ‘texts’.

“Thus existing studies of Indian digital diasporas are more concerned with the consumption of electronic spaces. The production end issues related to designing and building of e-spaces - is thus left to the ‘techies’ (engineers and programmers) and to professionals engaged in marketing and other e-business related activities. Implicitly, a divide is created between ‘culture’ and ‘economics’, between ‘applied technology’ and ‘discourse.’ Further (and perhaps as a result of the textual analysis approach), even where gender or geography is engaged, women and rural populations are hardly ever portrayed in ways that suggest that they could be active producers of online spaces and IT design. To understand this, there is a need for more research from the offline user end (perhaps focusing on ethnographic and auto-ethnographic investigations of processes of design and negotiation of such spaces).

5.6 ICTS, NATIONALISM, RELIGIOUS DIASPORAS

Information communication technologies, nationalisms, and religious diasporas are inextricably linked within processes of globalisation. “the world becoming” smaller” is enabled through a variety of technologies,

and the clashing of various cultural, religious, and political discourses and extremisms has material consequences. “the processes of production and cultural activities surrounding these processes are both products of economic globalisation and transnationalisation that rests on the need for self-contained identity formations (consumer demographics) and performance of multicultural difference. “Jihad” and other religious fundamentalisms and nationalisms (including modern-day “crusades”) are examples of “concepts of belonging” and ways of imagining community that are “currently being mobilised in the service of the larger political and economic demands associated with globalisation” (Spivak, 1999).

As is the case with the processes of reordering and the recent surge of ethnic nationalism in Eastern Europe and elsewhere, different fundamentalisms based in ethnic and religious identity formations are linked to emerging “global reconfigurations” that help the imagining of ethnic and religious communities transnationally while providing selective class-based access to global capital. Thus new hierarchies emerge that feed into “the logic of uneven global development.” Sadowski-Smith further states, “It is essential to realise that ... concepts of belonging are currently being mobilised in the service of larger political and economic demands associated with globalisation.”

What might be the role of virtual communities in fostering such nationalism? Virtual communities are passage points for collections of common beliefs and practices that unite physically separated people. In the case of a diasporic individual for whom home is no longer a concrete geographical place, cyberspace presents itself as an ideal site for community recovery and connection with other diasporas with similar backgrounds. For men and women in the diaspora, home already exists within the two-dimensionality of memory and nostalgia; therefore, it has been suggested that cyberspace may provide a way for these disembodied minds to make contact with apparently similar beings. This production of digital diasporic identity at the interface of internet technologies as online and offline interest is determined in various ways by access to computer technologies, the design of these technologies and the medium through which the identity will be shaped. The collective imaginations of the people involved will also be restricted by what is perceived as their material, social, cultural, ethnic, religious, geographical location.

An examination of the literature dealing with the socio-cultural, political and discursive aspects of cyberspatial South Asian formations reveals an interweaving focus on examining such online formations through theoretical frames provided by concepts such as ‘imagined community’ (i.e. how is imagining of community online taking place?) and diasporic counter publics. Within such a framing, some attention is paid to the structural and technical aspects influencing the socio-cultural shaping of online spaces. We need to examine these discussions for implicit assumptions.

There has been much discussion of the imagining of community in the available literature that examines virtual community formations. As these explanations imply, imagining happens on an individual level. There is an attempt to connect the individual (often personal) experience with macro-sociological features, often translating one directly into the other. This is

related to imagining any kind of community online, based on common interests, hobbies, collaboration on projects, professional interests, and so on. For instance, on any listserv, we imagine our readers/audience posting within an online community based on what the listserv FAQs and information sheets describe - we imagine co-members of the community. We imagine a kind of affective/intellectual communion. This imagining does not necessarily connect directly to our various real-life communities or other imagined ones online.

The other sense in which the term image is used in relation to the community is Benedict Anderson's definition of imagined communities. This type of imagining creates virtual communities framed around national, ethnic, religious, and diasporic identity/subject formations. To quote Ananda Mitra: "The imagination that binds the members of the electronic group is the common memory of the same putative place of origin from which most of the posters come. The sense of community is based on an original home where everyone belonged, as well as a sense of a new space where the question of belonging is always problematised. Since the original home is now inaccessible, the Internet space is co-opted to find the same companionship that was available in that original place of residence" (Mitra, 1997).

Thus, drawing from the work of Benedict Anderson, some researchers examine the socio-cultural manifestations of diasporas online and write of imagined communities of diaspora postcolonialism in cyberspace. Jon Anderson writes: Much as Benedict Anderson's creoles of early modernity was crucial to the imagined communities of ethnolinguistic nations that are modernity's signature, so, too, maybe the virtual communities for the emerging Information Age.

Mitra, in turn, makes a connection between imagining and imaging, indicating ways in which an electronic community can textually produce itself, thus imagine itself as well as present itself to the outside world, and thus produce an image. He further suggests that there exist opportunities for various peoples in the diaspora to form communities via the Internet, across place-based geographic boundaries, which are based on the constructs of commonality and fellowship while connecting to the conditions of existence of diasporic individuals.

While Jon Anderson and Ananda Mitra write of Arab and Indian diasporas online, not specifically focusing on the religious diasporas that have emerged in relation to various fundamentalist nationalisms that have arisen most visibly in the last decade (even while implicitly doing so), Amit Rai and Vinay Lal extend discussions of online imagined communities to an examination of religious diasporas, specifically the Hindu diaspora and the discourses surrounding events in Ayodhya, India, in 1992. Amit Rai attempts to interrogate the diasporic publics and counter publics in Hindu religious fundamentalist activities. He too uses Benedict Anderson's concept of imagined community while arguing that cyberspatial nets provide a space for South Asian Hindus to construct and contest identities that are doubly marked by the nightmare of all the dead generations what we diasporas remember as India and by the always deferred promises of this new land of opportunity what is imagined as America.

Rai's use of the notion of Imagined community leads him to examine the style in which diasporic communities are imagined and the regulatory fictions produced by officers of the British Empire. Thus, through the totalising classificatory grid[s] produced in British colonial times, South Asian identities in communal and religious diasporas are performed online. The performance of diasporic identities in these online communities is thus regulated through historic, political-religious discourses associated with colonial and postcolonial geographic territories and nationalisms.

Researchers such as Mitra use the concept of imagined community implicitly in an effort to examine possibilities in varying degrees for the emergence of diasporic formations. They seem not to question whether the Internet has the potential to enable a variety of liberatory and counter-hegemonic coalitions. Vinay Lal, however, writes explicitly against the celebration of the notion of Imagined Communities online. Further, he also begins to address the linkages between economic globalisation, e-commerce and these socio-cultural diasporic cyberspaces by pointing to how the agenda of the "internet elites" is linked with currently manifested hierarchies of globalisation. Such a global economic climate, thus, suggests that, contrary to being a panacea to the world's problems, cyberspace represents a more ominous phase of Western colonialism, the homogenisation of knowledge and, in tandem, the elimination of local knowledge systems.

For instance, during British rule, traditional modes of production in India were forcefully replaced by industrial mass production, which was more beneficial to the British economy than to the people in the Indian subcontinent. In the new industrial mass production era, the traditional products lost markets and their confidence. The resulting outmoding of traditional forms of community and production under the ideological cover of western Enlightenment led to a loss of self amongst local producers. People with expert knowledge of local modes of production were declared ignorant. In the presence of Enlightenment from the West, the Southern modes of thought and life were implicitly and explicitly constructed as backward, traditional and ignorant. With economic globalisation associated with ICTs and access to the material capital and even academic and cultural voice in the westernised world, certain hegemonic cultural systems are associated with upward economic mobility. Access and even mere survival are thus enabled only through sanctioned ignorances by subaltern others as they aspire towards the voice and material success or even just a basic means of livelihood. , the use of information technologies in the digital diaspora thus is situated in a larger socio-cultural ethos that denies the possibility of access and voice to certain populations of the world.

5.7 SOUTH ASIAN DIGITAL DIASPORAS- MOBILE (GADGET) GENERATIONS

So what about the generation of women and men in the diaspora who grew up taking computers and the Internet as a given in their lives? Some refer to these as the gaming generation — however, we would like to call them the mobile (gadget) generation since they move through the world in their mobile digital aura.

Several transnational venues in the digital diaspora are inhabited by the iPod carrying, Gameboy playing young men and women with their casual

dress code and urban manners. Some of these spaces are less U.S. centric than the previous internet-based SA generations - such as Livejournal, online journal communities (masked in semi-anonymity) that blur notion of transnational South Asian sexuality as they hide behind Bollywood icons. There is a continuing play on gender and identity as the Bollywood icons produced in such communities are subjected to a gaze that blurs the boundary between heteronormative idolisation of Bollywood stars and queer pleasure, while also producing uncertainty about geographic location as they appear to multitask between work, fun and offline/online formations of friends. Being online is no more unique than being on the phone for this lot. Even the telephone is digital connectivity for this generation, as they incessantly text-message each other, download and exchange ring- tones, pix, flex. This elite group of young South Asians in the digital diaspora are multiply literate and socio-culturally flexible and mobile as they “hang out” in online communities of open-source developers, Bollywood and Tollywood fan groups and so on. Thus Indian digital diasporas continue to be elite, with the haves facing the possibility of “having it all” with a great gap between the haves and have-nots. It is possible to see that the everyday practices of mobile generations in digital diasporas are engaged in a different kind of problem-solving space than those living in the materially underprivileged areas of the world. Thus while the categories of “virtual” and “real” cannot be applied - we can certainly see the socio-economic and cultural gaps between the mobile and immobile widening.

Actively – 1

Do a google search for Indian diaspora - select five websites based on your interest. Describe what drove your choice of these websites. Examine the websites carefully to see what is being represented and how. What audience does each website seem to be targeting? Why do you suppose? Is the content and form of the website accessible to the audience they claim to be targeting -why or why not. Analyse the images in relation to the gender, caste and class representations. Discuss all this in a 1000 word essay. Print out the website and images and attach them as appendices.

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. Explain the characteristics of Indian digital diasporic communities?
.....
.....

2. Explain the influence of digital technology on diaspora communities?
.....
.....

5.8 LET US SUM UP

Globalised digital technologies and telecommunication technologies play an important role in connecting people, so much so that one wonders whether there are virtual communities in cyberspace. To understand such and other

related questions, we felt it would be useful to have detailed discussions on concepts such as cyberspace and virtual community. We also tried to give you an overview of the literature available on this topic to grasp the topic better. Our interest is also in detailing how diasporas connect over the Internet, and what these interconnections mean. In this Unit, we have analysed the coming together of the Indian diaspora. The diaspora felt they were part of a larger tradition of Hinduism and were therefore mobilising people and taking political action. We also discuss how internet communication offers anonymity to the users that they can play their fantasies and hide behind pseudo-identities and what it means to the new generation. Cyberspace and digital communication are not without the politics of hierarchy, difference and inequality. The Internet has been confined largely to the elite. As a part of a larger globalisation process, which tends to homogenise the world, the Internet tends to homogenise knowledge.

5.9 FURTHER READINGS

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5.10 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1:

1. Cyberspace refers to a person's mental construct from experiencing computer communication and information retrieval. The science

fiction author William Gibson developed this term to describe the visual environments in his novels. Gibson described worlds in which computer users navigate a highly imagistic global network of information resources and services.

2. Watson admits that communities online are different from offline communities, but he argues that they are communities. Watson also examines applying or denying the community metaphor for groups of people interacting online. He discusses Neil Postman's critique of the virtual community centred around the notion that online groups enable the separation of the "real" from the "virtual". Postman objects to the use of the term community within online contexts because online groups "do not contain the stake that exists in "real " communities..... they lack the essential feature of a common obligation. More accurately, online communities lack the consequences of not meeting or participating in the common obligation of most communities" (Watson, 1997:122).

Check Your Progress 2:

1. On the other hand, much of the available literature studying Indian digital diasporas is limited to studying Indians/South Asians in the digital diaspora as discursive formations online, describing the socio-cultural aspects of online formations of various South Asians both located geographically in South Asia and living in the diaspora outside of South Asia. Much of this latter body of literature focuses on the various religious diasporic formations online, discussing Hindu Diaspora online, Sikh Diaspora, Eelam online, Muslim diaspora, etc. This literature is important - just as the literature that examines Indians and the IT industry. Both bodies of literature shed light on how the Indian digital diaspora is manifested.
2. Several transnational venues in the digital diaspora are inhabited by the iPod carrying, Gameboy playing young men and women with their casual dress code and urban manners. Some of these spaces are less U.S. centric than the previous internet-based SA generations - such as Livejournal, online journal communities (masked in semi-anonymity) that blur notion of transnational South Asian sexuality as they hide behind Bollywood icons. There is a continuing play on gender and identity as the Bollywood icons produced in such communities are subjected to a gaze that blurs the boundary between heteronormative idolisation of Bollywood stars and queer pleasure, while also producing uncertainty about geographic location as they appear to multitask between work, fun and offline/online formations of friends. Being online is no more unique than being on the phone for this lot. Even the telephone is digital connectivity for this generation, as they incessantly text-message each other, download and exchange ring- tones, pix, flex.

UNIT 6: ICT AND DISABILITY

Structure

- 6.0 Introduction
- 6.1 Learning Outcomes
- 6.2 ICT for Persons with Disabilities
 - 6.2.1 Terminologies
 - 6.2.1.1 Information Technology (IT)
 - 6.2.1.2 Assistive Devices (AD)
 - 6.2.1.3 Assistive Technology (AT)
 - 6.2.1.4 Information and Communication Technology (ICT)
 - 6.2.1.5 Universal Accessibility
 - 6.2.2 History of Assistive Technology
 - 6.2.2.1 Benefits of Information and Communication Technology (ICT)
- 6.3 Present and Future of ICT
 - 6.3.1 The Present Scenario
 - 6.3.2 The Future
- 6.4 ICT for various types of Disabilities
 - 6.4.1 Technology used at institution level for instruction
 - 6.4.1.1 Online Education
 - 6.4.1.2 Radio Programmes
 - 6.4.1.3 Teleconferencing
 - 6.4.1.4 Web conferencing
 - 6.4.1.5 Mobile phone based education
 - 6.4.1.6 E-Resources
 - 6.4.1.7 Television
 - 6.4.2 Technology used at Individual Level
 - 6.4.2.1 Technology for Persons with Intellectual Disability
 - 6.4.2.2 Technology for persons with Locomotor Impairment and Cerebral Palsy
 - 6.4.2.3 Technology for Persons with Hearing Impairment
 - 6.4.2.4 Technology for Persons with Visual Impairment
 - 6.4.2.5 Technology for persons with Autism
- 6.5 Let Us Sum Up
- 6.6 Further Readings
- 6.7 Check Your Progress: Possible Answers

6.0 INTRODUCTION

Technology has the potential for making significant impact in the lives of persons with disabilities. It can enable them to compensate for physical or functional limitations and as a result allowing them to enhance their social and economic inclusion in society. Technology helps persons with disabilities to live an independent life to a great extent. Assistive technology

provide greater independence to persons with disabilities by enabling them to perform tasks that earlier they were not able to accomplish or had much difficulty in doing.

Recent pandemic has forced the extensive use of technology by various people. As a matter of fact only technology is connecting all of us to the outside world and most of us have been using it to compensate for physical contact. Many organisation/companies have allowed the employees to work from home. Schools are teaching children through technology at their home, NGO's are providing counseling and other online support to the beneficiaries.

The rehabilitation services provided to persons with disabilities can be improved with the help of new advanced technologies. Keeping in mind the need and demand of persons with disabilities many new technological solutions have come into existence. The effective use of these technologies can enhance the functional capabilities of persons with disabilities and in turn they can contribute effectively for the society.

In this unit we will discuss about the various technologies useful for persons with disabilities.

6.1 LEARNING OUTCOMES

After going through this unit you will be able to

- Describe the benefits and limitation of ICT for persons with disabilities
- Analyse the emerging trends related to ICT for persons with disabilities
- Discuss various types of ICT used at institutional level for persons with disabilities
- Enumerate various types of technologies available for persons with disabilities for individual use.

6.2 ICT FOR PERSONS WITH DISABILITIES

Various Government, non-government organizations and individuals have taken initiatives for developing technologies after considering the needs of persons with disabilities. They have not only developed these technologies after research but they have also adapted several technologies developed in other countries to suit the local needs.

6.2.1 Terminologies

There are several terminologies that are used interchangeably for technology, let us discuss some of these terminologies.

6.2.1.1 Information Technology (IT)

Wikipedia definition of Information Technology (IT) is – “Information Technology the use of computers to store, retrieve, transmit and manipulate data or information in its various forms”.

6.2.1.2 Assistive Devices (AD)

The terms assistive device has been applied to a wide range of highly specialized mechanical, electronic and computer based consumer tools that are now commonly used in rehabilitation and education settings.

6.2.1.3 Assistive Technology (AT)

Assistive technology refers to any tool, item or product used for enhancing, preserving or increasing the competencies and abilities of individuals with disabilities to their potential.

6.2.1.4 Information and Communication Technology (ICT)

Information and Communication Technology are defined as diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. Basically ICT is technology that supports activities involving information such as gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication hence information technology has become ICT.

6.2.1.5 Universal Accessibility

Universal accessibility means making a device, product, website or a building usable by the larger number of people irrespective of their language, gender, height or abilities, bringing the concerns subject within the reach of maximum number of people.

6.2.2 History of Assistive Technology

Assistive Technology is a tool or a device that help persons with disabilities in doing their activities and it enhance their capabilities, it can be a simple device or a technological tool that can help persons with disabilities. If we look into the history of development of assistive technology we can say that in 1808 Pellegrino Turri invented a typewriter to help his childhood friend Contessa Fantoni in the early stages of blindness so that he can write with the help of it. Since then there have been many other such attempts to strengthen the assistance for persons with disabilities. Louis Braille developed a language based on tactile writing system for the blind in 1921 this language is called Braille. Braille has made a great impact on the lives of persons with disabilities and it has helped them tremendously.

The invention of telephone was also a big contribution for helping individuals to communicate with each other from a long distance. This device was combined with a text telephone known as telecommunication device for the deaf that enabled them for communication with the people from long distance. Televisions, remote controls, talking calculator, talking watches, speech recognition system etc. have made the life of persons with disabilities easier.

6.2.2.1 Benefits of Information and Communication Technology (ICT)

The use of ICT has brought enormous change in the life of persons with disabilities because of the enabling effect of technology now people talk about the potentials of persons with disabilities instead of their limitations and they are seen as productive partners in every segment of society. Some of the benefits of ICT are following:

- a) Promotion of equal opportunities
- b) Improved communication
- c) Movement and mobility is increased
- d) Participation in community is enhanced

- e) Increased independence in various spheres of life like home, school, college, community, markets and work place etc.
- f) Persons with disabilities become self reliant
- g) Participation of persons with disabilities in the various activities at home, school and work place is increased and the full potential of persons with disabilities is utilized
- h) Persons with disabilities feel self motivated
- i) Persons with disabilities feel more accountable
- j) Persons with disabilities get more opportunities, interaction and communication with others
- k) Self respect and confidence of persons with disabilities is enhanced
- l) Use of technology help in improving writing and organizational skills
- m) Technology help them in learning through their preferred mode that is i.e. visually or auditory
- n) Technology facilitates sharing of resources, expertise and learning material among the users
- o) The accessibility is higher when technology is used
- p) Employment opportunities for persons with disabilities are increased by the use of technology
- q) Persons with disabilities can participate in sports and recreation with the help of technology

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. Define Information and Communication Technology in your words.

.....

2. What is universal accessibility?

.....

3. Write the names of any two technologies developed to assist persons with disabilities in early years.

.....

4. List 5 benefits of ICT.

.....

6.3 PRESENT AND FUTURE OF ICT

In India we have adopted the rights based approach after signing the UN convention on the Rights of Persons with Disabilities in 2006. The Rights of

Persons with disabilities Act 2016 has compulsorily adopted this approach and emphasized that the rights of persons with disabilities should be protected and they should be treated with equity and equality in each sphere of life. Consequently it has been envisaged that all measures should be taken for full and effective participation of persons with disabilities at various places. We need to respect their individual differences and accept them and provide equal opportunities to live a healthy life. Technology in a great leveler for providing equal opportunities to persons with disabilities, as appropriate assistive technology enables them to work effectively. Persons with visual impairment can read with the help of JAWS software, they can access the online library through it and the online material available in accessible format enables them to do their studies or work. Similarly there are other technologies available for persons with other disabilities. We will discuss about them later in this unit.

6.3.1 The Present Scenario

Development of ICT for all kind of disabilities is a huge task that needs research and innovations. In India around 70% of the population lives in rural areas that makes the task of providing technological intervention for such a diverse group of people very difficult. After the enactment of Rights of Persons with Disabilities Act 2016, 21 types of disabilities have been identified and most of the persons having these disabilities require assistive device for helping them in their daily living skills or vocational skills. Various initiatives taken by government or non government organisations for research and development of assistive devices have contributed for improving the quality of life of persons with disabilities. They have not only developed the technology for persons with disabilities but they have also been able to adapt the technologies developed in other countries to suit the local needs of India. These technological devices are provided by Government to the eligible persons without any cost under a scheme called ADIP scheme, apart from this these devices are available in the market too.

Children with intellectual disabilities quite often like to use computers provided the software in the computer is suited to their slow pace, they enjoy working on it and the technology enhances their capacity by gainfully engaging them through various tasks or games. To provide them instructions there are several games available which provide them simulations, demonstrations, problem solving and discovery learning.

Persons with visual impairment find the use of technology very convenient as they can read, write, walk or do various activities with the help of technology. There are various technologies available for them to help them in their mobility, education or daily living activities i.e. smart cane, screen magnifier, screen readers, Braille printers, Braille embossors, talking diary, talking calculator, talking ATM etc.

Telephone is one of the first technological devices developed for persons for hearing impairment. Alexander Graham Bell invented the telephone for helping his wife who had a hearing disability. Individual FM system, Loop induction system, speech processing software, computer assisted remote transcription, captioning and various types of alerting devices are available for persons with hearing impairment.

Similarly there are numerous other devices to help persons with locomotor disability and cerebral palsy. For persons with autism communication skill is very important and there are few devices available to assist them. Now-a-days app based support is also provided to persons with disabilities, recently Sense International India and Samsung have developed a mobile app named Good Vibes for persons having deaf blindness to help them to communicate with their caregivers and family members.

6.3.2 The Future

In last few years there is a revolution in the area of technology. Artificial intelligence has been a key for this sector, but when a technology is developed very few companies think about the accessibility of this technology to persons with disabilities. It is high time that as a country we think about universal accessibility of the technologies being developed for various areas of life, inclusiveness of the technologies will enhance the capabilities of persons with disabilities to a great extent. If we take the example of persons with deafblindness there is hardly any device developed in India for supporting them. The persons with deafblindness have a unique condition – a combination of visual and hearing impairment. Although the degree of deafness or blindness varies, the combination of dual sensory loss leads to unique problems in an individual's capability for communication, mobility and their ability to access information. The technological intervention with the help of an app can provide them ability to communicate with their care givers and family members. Keeping this in mind recently Sense International India joined hands with Samsung to develop a communication tool for the deaf blind. This is a two way communication app that allows the deaf blind to send and receive messages to friends, family or anybody else through their smart phone. More such initiatives needs to be taken to meet the needs of persons having various disabilities.

Recently the whole world has witnessed COVID 19 Pandemic and it has resulted that all the educational institutions are providing educational support to their students with the help of ICT. Mobile phones have been used extensively, the teachers are using various platforms to teach the children from their home. Although our educational system was not prepared to teach the students through mobiles or computers but despite all the difficulties they have been doing this for last few months. In this situation it is very difficult for persons with disabilities and their families to cope up with the lack of accessibility to suit the individual needs. This is a right time when as a country we think about the various needs of children/individual with or without disabilities, the pedagogy also needs to be aligned to suit the needs of all children.

There is a need to emphasise more on massive online open courseware (MOOCS) that can enable person with or without disability to learn at their own pace or place. Gaming has also be emerged as a powerful tool. Judicious use of accessible gaming will help the persons with disabilities for leisure, personalised virtual teacher, automated assessment and evaluation etc. Mobile technology is also helping the persons with visual impairment, hearing impairment and other disabilities to a large extent,

more such initiatives needs to be taken for developing universally accessible technologies for persons with disabilities.

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. Rights based approach means

.....
.....

2. Good Vibes app is developed by and To help individuals with

.....

3. Two technological devices beneficial for persons with visual impairment are and

.....

4. Loop induction system is beneficial for persons with

.....

6.4 ICT FOR VARIOUS TYPES OF DISABILITIES

ICT is used for providing support to persons with disabilities, when it is used in educational institutions following the principles of universal accessibility then it helps students with disabilities tremendously and they are included in all the activities of that particular institution. Similarly when a website is designed following the universal accessibility then the needs of persons with disabilities are ensured. If at the time of planning of a course/ lecture/ discussion /visual aids/video tapes/printed material and practical/field work the accessibility for students with disabilities are kept in mind then it help in their inclusion and learning to a great extent. Distance learning programmes that incorporate universal accessibility features helps the students with diverse needs to learn at their own pace.

Use of technology for providing accessible education to students with disabilities is being done at institutions level as well as personal level. Means the technology is used by a bigger system i.e. university or a college to support the educational needs of students enrolled in various programmes including students with disabilities. On other hand the technology that helps an individual to compensate for his or her limitation or restriction in one or more areas is used at individual level. Let us discuss about this in brief.

6.4.1 Technology used at institution level for instruction

With the help of technology education can be more open and accessible to all the students enrolled in a particular programme specially the students with disabilities. With the help of these technologies support can be provided to the students with disabilities in their teaching learning process.

6.4.1.1 Online Education

Online education is very convenient for the students with disabilities as they can learn from the convenience of their home and use of accessible softwares

enables them to compensate for their inability. In online programmes there is a scope to learn at a flexible time and pace. If the students with disabilities are provided the content in accessible format then they benefit a lot from it.

6.4.1.2 Radio Programmes

Radio Programmes are being used by various educational institutes to provide education. Some of the institutions have their own community radio channels whereas other has access to FM channels or Gyanvani channels. The students with disabilities benefit from these programmes enormously. IGNOU has Gyanvani programme that offers interactive radio counseling to the students which enables them to interact with their teachers at the ease of their home. Radio programmes are not accessible to the students having hearing impairment as they will not be able to hear the discussions. The students with speech impairment will also not be able to participate in this because of their speech problem. Therefore while planning the educational support for a diverse group of learners, alternative mode for supporting students with other disabilities should be considered. In this case the students with speech and hearing impairment can be provided facility for live chats or support through telecommunication devices to the deaf students.

6.4.1.3 Teleconferencing

Teleconferencing facilities enrich the learning experiences of all students enrolled in any educational programme provided the needs of students with disabilities are considered before planning these programmes. To suit the needs of diverse group of learners, the teleconferencing programme can be made in universally accessible formats wherein the captioning and sign language interpretation is inbuilt into a programme alongwith the live discussions and powerpoint presentations.

6.4.1.4 Web conferencing

Web conferencing can also be planned by adding sign language interpretation, captioning and audio recordings or descriptive captions/descriptive narrations etc. to suit the needs of individuals with various disabilities.

6.4.1.5 Mobile phone based education

Smart phones have become an integral part of everyone's life in this technological era. Judicious use of mobile application can go a long way in providing quality learning experiences to students with disabilities as they can learn from the mobile application based contents provided to them by their educational institute. IGNOU has also developed a mobile application 'IGNOU e-Content' to enable the learners to access its learning material through their mobile phones. The learners can access their course material from anywhere at their convenience.

6.4.1.6 E-Resources

Availability of e-resources in accessible form are very beneficial to students with disabilities, Accessible libraries having content in e-Pub format or in other formats suitable for persons with disabilities are providing enormous support to students with disabilities i.e. Sugamya Pustakalaya and Bookshare. IGNOU has also developed a digital educational resources repository of self learning materials of its programmes. The repository named as e-Gyankosh

has all the instructional material and video programmes developed by IGNOU and it provides open access to all. E-Gyankosh is very popular among the students with disabilities irrespective of their enrolment in IGNOU.

6.4.1.7 Television

Television is very powerful tool for providing education to the learners with disabilities at their doorstep. There are several educational channels that provide facilities for learning in different subjects ranging from primary to higher education level. Gyan Dharshan is one of such channel in IGNOU that provides a variety of programmes across all disciplines to cater needs of wide range of viewers in higher education. It is beneficial for the learners of formal education system as well as other stakeholders. Learners with disabilities find it very useful for their studies.

6.4.2 Technology used at Individual Level

Persons with disabilities use various technologies to accomplish various tasks as per their need they are discussed here for the benefit of our learners.

6.4.2.1 Technology for Persons with Intellectual Disability

Technology can compensate for the functional limitations of an individual. Persons with intellectual disability should be introduced to the technology as early as possible. The teachers need to provide them these devices in all settings including home, school, work and recreation. Because these children have limitation in their mental functioning therefore there should be a consistency in the kind of technology available, how it is used and instructional method for operating the particular device. When a child is being taught a new technology their previous learning needs to be considered. The purpose of instruction is to provide them interactive experiences to promote learning among them. Several instructional programme for children with intellectual disability are drill and practice, instructional games, tutorials, simulations, demonstrations, problem solving, discovery learning etc.

Usually the persons with intellectual disabilities are provided instructions with the help of technology. There are several technologies for daily living skills for persons with intellectual disabilities like electronic planners remind them about the various tasks that they need to do at a particular time. When the child feel lonely they can be given the talking doll or any other toy. Soothers are objects that help them to keep calm and engaged i.e. electronic devices that can make sounds or anything as simple as a small soft toy or a small pebble that can be kept in the pocket. Video based instructional system can help them in learning functional life skills such as grocery shopping, writing a cheque or using ATM etc.

Technology for assessment of children with intellectual disability has also been developed wherein integrated assessment in detail and records of each child can be kept in the assessment tool. Media Lab Asia in collaboration with C-dac has developed (Punarjjani) a software tool to equip the teachers for the progress assessment and evaluation of children with intellectual disabilities.

6.4.2.2 Technology for persons with Locomotor Impairment and Cerebral Palsy

Cerebral Palsy is a group of non-progressive condition of a person characterized with abnormal motor control posture resulting from brain injuries incurred during the prenatal parinatal or infant period of development. Due to problem in movement these children face many problems in their life. Many persons with cerebral palsy have slight impairment whereas others have serious problems that cause them to have difficulty in performing even the most common task. Technological intervention will helps them in overcoming these problems and live independently as far as possible.

Persons with Cerebral Palsy with mobility impairment will need devices that can help them to go around they can use these devices for their studies or workplace. Wheelchair is the main device for mobility of children with cerebral palsy or locomotor disability. Now-a-days electronic wheelchairs are available at reasonable prices which are better than the manual wheelchairs. In case the individual is not able to use the wheel chairs they can be modified with a provision of switches that come in a wide variety. Sometimes they are shaped like a button, hand or foot operated or operated by the waving of hand etc. These switches can be selected depending upon the condition of the individual.

The most common form of human communication is speech. Children with Cerebral Palsy in some cases are totally unable to speak or in some cases they are not able to communicate effectively with their speech. In this case they may need a non speech mode of communication as an alternative of spoken language. They need alternative mode of communication therefore a few alternative and augmentative communication (AAC) devices have been developed for use of non speech mode to support these students. AAC is an integrated group of components including the symbols, aids, strategies and techniques used by individuals to enhance communication. In this system multiple components for communication are available. Some of these devices have been developed indigenously whereas others are adopted from other countries. The devices developed in foreign countries are - dedicated communication device, the alpha talker, the walker talker, the digital augmentative communicator, canon communicator, vocaid, board maker software, whereas Sanyog, Gup Shup, pictorial communication software, aditi, idraw, voice output communication aid are developed in India. These devices assist children with limited communication or no communication to communicate with their families and care givers effectively.

There are several other devices that help children with cerebral palsy and locomotor disability in their daily living activities these are computers, mobile phones, voice recognition, switches, adaptive key boards, touch sensitive screens, infra red sensors with pneumatic switches.

6.4.2.3 Technology for Persons with Hearing Impairment

Persons with Hearing Impairment are those who are having a hearing loss and because of that they are not able to process linguistic information through auditory channels with or without amplification. They may be able to hear some sounds but may not be able to distinguish words. Some other

people may not be able to hear sounds at all. For these people prompts such as alarm, beep and spoken messages can be an issue of concern as they will not be able to hear. The devices that help to enhance a person's hearing capacity is called an assistive listening device. Apart from these devices telecommunication devices are developed to assist the person with severe hearing impairment. As mentioned earlier first technological device designed for persons for hearing impairment is telephone that was originally invented by Alexander Graham Bell for helping his wife who had a hearing disability. The advancement of technology has led to the development of a wide range of modern assistive listening and telecommunication devices that assist students with hearing impairment to participate more effectively in various areas of life.

Telecommunication devices allows the users to use a keyboard to type and receive messages over the phone. Mobile phones are widely used for communication through SMS or other forms of messages. For education of persons with hearing impairment individual FM system is used, it is an assistive listening device that improves the sound noise ratio for one person by using a remote microphone placed near the source of sound. A basic FM system consists of two units, a transmitter and a receiver and is like having an individual radio station that transmit and receive on a single frequency. These systems are useful in classroom lecture, in a restaurant, theaters, public meeting place, corporate conference rooms and other large areas for gathering.

There are sound enhancement technology devices that transmit the sounds from the source to the receiver by improving the signal to noise ratio. These are designed to deliver the sound directly to the listener who has direct control over intensity of sound. This technology is used to enhance the auditory signal during communication in the group, in one to one situation or audio video signals. Some examples of sound enhancement devices are FM systems, infrared system, hardware system, and induction loop system etc.

Hearing aid is an amplifier which helps the person to listen to a sound with minimum distortion by increasing the intensity of sound. The role of hearing aid is to increase the level of sound so that person with hearing impairment can detect and make use of auditory signals. We can say that hearing aid is an electronic device that amplifies sound to a degree and in a manner that will enable a person with hearing impairment to utilize remaining hearing capacity effectively. The hearing aids are of two types one is individual hearing aid and another is group hearing aid.

There are technologies available for assessment of hearing impairment in the audio lab. The software packages allows the users to record the speech signal and graphically added the same to prepare the test words. Some of the devices used for assessment are speech processing software, visual reinforcement audiometry, pure tone audiometers, speech audiometry, speech trainer and visual aids.

There are several devices available for providing support services for daily life for persons with hearing impairment. Computer assisted remote transcription allows a stenographer to transcribe a meeting from a remote

location. The facility of captioning means addition of text to a visual display that helps in conversion of spoken words into text. In many programmes on television facility of captioning is available, live speech captioning is another type of captioning that provides accessibility of lives programmes and speeches to the persons having hearing impairment. In educational setting this technology is very beneficial for students having hearing impairment as the speech is typed simultaneously by a stenographer and the text will be displayed on a screen. Alerting devices are those that listen to the sounds on behalf of the persons with hearing impairment and draw their attention to the sound source by generating a visual signal. Example of this is a door bell that makes low sound and a flash light, similarly in telephone vibration or flash light is used.

Telecommunication devices for deaf are widely used by them to make or receive a phone call. These devices generally attached with the telephones and they have a small key board for typing and a screen to display an incoming or outgoing messages. These devices can be attached with a printer to have a copy of conversation. To use the telecommunication devices the users have to type the messages that they want to convey, the written text will be automatically converted into speech and will be transmitted over the phone to another user. It converts the messages back into text form. These technologies are helpful for students with hearing impairment to interact with each other and other stakeholders.

6.4.2.4 Technology for Persons with Visual Impairment

ICT advancement has increased the quality of life of persons with visual impairment and their education is significantly enhanced by the application of technology. The modern technology has given amazing experiences to persons with visual impairment understand the unseen world through non-visual media. In this digital era mobile phones, computers, i-pad, scanner and internet has provided them opportunities for flying out of their boundaries and interact with the world. They can obtain information on any topic with the help of internet which was earlier difficult for them to get either in Braille or from other sources. Availability of e-books, e-newspapers and e-resources have helped them tremendously.

To reduce the limitations for students with disabilities several efforts are required like curriculum adaptation, training in plus curriculum, providing modified teaching learning materials and access to technologies suitable for them. There are several technologies that help them in mobility and they can go at the desired places without any dependence on others, some of these are - white cane fitted with laser, sonic guide, touch traffic light signal, path sounder, mowat sensor, mobility assisting softwares and smart cane. All these devices help persons with visual impairments in moving around independently.

There are several technological solutions that help persons with visual impairment in their education these are - close circuit television, large print computer, screen magnifiers, screen readers, Braille embossers, referable Braille displays, optical character recognition, e-books, audio books,

digitally accessible information system (DAISY), text browsers, voice browsers, audio devices, Braille note takers, talking calculator, electronic Braille, internet, mobile phones etc.

There are numerous technological devices that help persons with visual impairment for their life skills these are – Braille printing system, handy Braille, talking diary, talking watch, talking tool box, talking alarm clock, talking color detector, talking measuring tap, talking kitchen scale, talking microwave oven, talking ATM etc. With the help of these devices persons with visual impairment can undertake their daily living activities at home, workplace, market, recreation centres and in community at large. They do not need to be dependent on others for their routine activities related to various areas. The need is to provide them proper orientation and mobility training initially so that they are well aware about their surroundings and the places where they need to go frequently. The devices mentioned above will help them tremendously in various settings.

6.4.2.5 Technology for persons with Autism

Technology plays a very important role for the benefit of persons with autism. Autism is a developmental disorder characterise by triad of impairments in social interaction, verbal and non verbal communication and repetitive interests or pattern of behavior. It is developmental disability with onset in early years and causing serious problems or delays in different areas of development of children. They are not able to relate to others and may show abnormal interests in objects, may not maintain eye contact with others, remain aloof and asocial, resist change and insist in sameness.

For children with autism intervention needs to be provided for enhancing their verbal and non-verbal communication, social interaction, leisure and play activities for their holistic development. With the help of technology they can become participative and enhance their adaptive skills. Devices like talk pad, language master, voice output communication aid, audio taping, sanyog, autism my voice communicator, first then visual schedule, my pictures talk, pictello, speech journal etc. are devices that help them in communication with their environment.

A person having autism find difficulty in focusing attention as a result learning become difficult for them. Use of technology helps them in learning as their often interested and attentive to the videos and use of computers. Selection of appropriate technology will help in enhancement of their academic achievements, a few technology based devices are – video tapping, computers, LCD projector, autism bundle etc. there are various other softwares available for them for educational purposes.

The persons with autism have difficulty in social interaction and they show less attention to social stimuli, smile and do not look directly at other person. They have very less or no eye contact, use of appropriate technology can help them to enhance their social skills, a few of them are – bigmack, audio tapping, visual impact, symtrend ADL, tool factory beep, injini child development game suite, sound beginnings and touch it transport etc.

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. How educational institutions can provide instructions to persons with disabilities by using technology?

.....

2. Write any two benefits of mobile phones for education of persons with disabilities.

.....

3. Name any two devices used by persons with hearing impairment?

.....

4. How video based instructional system will help persons with intellectual disability?

.....

6.5 LET US SUM UP

In this unit we discussed about the various technologies used for persons with disabilities. We have discussed various terminologies that are used interchangeably for technology. The benefits of technology were also discussed in this unit.

We traced the history of assistive technologies and discussed the present scenario regarding the technologies in the country. We also discussed the future of technology for our country.

Technologies are beneficial for persons with disabilities and these are being used by various educational institutions to provide effective support to students. We discussed the various types of technologies that the being used by various institutions for providing instructions to the students and how they can help students with disabilities.

There are several technologies that help persons with disabilities individually to accomplish various tasks. We discussed about such technologies available for persons with intellectual disability, persons with locomotor disability and cerebral palsy, persons with hearing impairment, persons with visual impairment and person with autism.

To some up we can say that technology plays very important role in the life of persons with disabilities and it offers immense possibilities for their education and daily living skills. Use of appropriate technology can empower the persons with disabilities and they can become the productive part of society.

6.6 FURTHER READINGS

1. Hemlata (2014). *Technology for Inclusion of Persons with Disabilities*. New Delhi: Kanishka Publishers, Distributors.

2. Narsimhan. N. *e-Accessibility Policy Handbook for Persons with Disabilities*: Based Upon the ITU-G3ict e-Accessibility Policy Toolkit for Persons with Disabilities. Mumbai: Hemkunt Publishers (P) Ltd.
3. Singh, J.P. (2003). *Technology for the blind concept and context*. New Delhi: Kanishka Publishers, Distributor

6.7 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress: 1

1. Information and Communication Technology can be defined as a set of technological tools that are used to communicate, create, spread, store and manage the information.
2. Universal Accessibility means a material website or building is made in way that can be used by a large no. of people without any hindrance and it will be equally useful for all
3. Typewriter and telephone.
4. Promotion of equal opportunities, improved communication, enhanced community participation, persons with disabilities become self reliant confidence of persons with disabilities increase.

Check Your Progress: 2

1. Persons with disabilities are treated with equity and equality in each sphere of life and their individual differences are respected
2. Sense International India and Samsung, deafblindness
3. Smart cane, Screen Readers
4. Hearing Impairment

Check Your Progress: 3

1. Educational Institutions can provide instructions to students with disabilities very effectively through the use of radio programmes, mobile apps, web conferencing , e-resources, teleconferencing and television programmes etc.
2.
 - i) Study material can be accessed from anywhere
 - ii) Students can be provided continuous support by the teacher through smart phones
3. Hearing aid and induction loop system
4. It will provide them interactive experience and will enhance their functional limitations to some extent.