UNIT 2  ICT AND DIGITAL DIVIDE

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2.0  INTRODUCTION

ICT deals with how digital information passes between the devices. The most prolific example is the Internet, a worldwide network of computers linked together by telephone lines. There are however, other examples, like mobile phones, interactive televisions and personal organizers. When ICT is applied to business, it can lower Costs, raise productivity and improve customer and supplier relationship. In learning, ICT widens participation and raises attainment. In public services, ICT engages people with services more effectively and in communities, ICT links people to economic opportunity and brings together those with common agendas.

The opportunities for social and economic development which can not be availed by the people because of inaccessibility and lack of information will now be available to all. This information could be used for trade, online education, telemedicine, e-government and many other applications that solve vital problems in the developing countries. It could open up new possibilities for more transparent and efficient public administration/governance everywhere. It could distribute knowledge and expertise in the areas of education and public health from the centers of expertise to the remote corners of our country. But the advantages of ICT are not reaching to the people who need it most. Its benefit is going mostly to those who are already well placed.

It has given birth to a new kind of division not only at international even at national level. This division is between those who have access to ICT and those who don’t have. This division is popularly referred as ‘Digital Divide’.

In this unit, we will study the evolution of ICT, benefits, concept of digital divide and the problems created by the digital divide.

2.1  OBJECTIVES

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

- describe the meaning and different forms of ICT;
- explain the evolution of ICT;
Elements of Information Technology

- list the advantages of ICT;
- explain the concept of Digital Divide;
- state the reasons for the existence of digital divide;
- describe the different dimensions of the digital divide;
- list the problems created by the divide; and
- describe the challenges posed by the digital divide and the responses of the government of India.

2.2 EVOLUTION OF ICT

The first major use of Information Technology (IT) could be said to have started with the introduction of early mainframe computers to respond to the needs of scientific research and the Government’s statistical data gathering and processing, where the technology helped to speed up research and forecasting. These techniques were later applied to the business environment where mainframe computers and robotics were used to automate business processes and number crunching functions. From automation of business processes, IT was then applied to higher value-adding functions such as design, resource planning, sophisticated manufacturing and mission critical functions. The developments and applications of IT have stretched beyond imagination. Together with the rapid development and innovation in telecommunication technology and the Internet, this evolution has ushered in many new business models and applications.

ICT is robust that it can be harnessed in many ways, but its true potential is limited only to the human mind. With ICT, the physical boarder dissipates as information moves freely through the digital medium which is less controlled as compared to other existing mass media. Globalization is said to accelerate, and enabled by ICT, making market bigger and more accessible by business with strong capital, management and technology. Business or E-commerce has started to be done virtually and transaction occurs at a click of a mouse anywhere and any time. Scientific findings churn faster and newer discoveries and inventions through the journal and reports are made available through ICT. The technology that began life as a faster way to process data and compute statistics has become pervasive in almost all parts of our life today. So ICT has become the backbone of Techsavvy Society, having combined both information technology and communication through digital environment today.

Check Your Progress 1

Fill in the Blanks:

i) ICT has become the backbone of __________.

ii) ______________, ______________, interactive television are few examples of ICT.

2.3 MEANING OF ICT

ICT is an acronym that stands for Information and Communication Technology. However, apart from explaining an acronym, there is not a universally accepted definition of ICT. Why? Because the concepts, methods and applications involved in
ICT are constantly evolving on an almost daily basis. It is difficult to keep up with the changes because they happen very fast.

Let us focus on the three words behind ICT:

- INFORMATION
- COMMUNICATION
- TECHNOLOGY

A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organizations also use information.

ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form for example, personal computers, digital television, email and robots.

ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly, it is also concerned with the way these different uses can work with each other.

In business, ICT is often categorized into two broad types of product:

- The traditional computer-based technologies (things you can typically do on a personal computer or using computers at home or at work); and
- The more recent and fast growing range of digital communication technologies (which allow people and organizations to communicate and share information digitally)

Let us have a brief look at these two categories to demonstrate the kinds of products and ideas that are covered by ICT:

**Traditional Computer Based Technologies**

These types of ICT include:

1) **Standard Office Applications** - Main Examples are as below:

- Word processing, e.g. Microsoft Word: Write letters, reports etc;
- Spreadsheets, e.g. Microsoft Excel, Analyze financial information, calculations, create forecasting models etc.;
- Database software, e.g. Oracle, Microsoft SQL Server, Access, Managing data in many forms, from basic lists (e.g. customer contacts to complex material like catalogue);
- Presentation software, e.g. Microsoft PowerPoint, make presentations, either directly using a computer screen or data projector, publish in digital format via email or over the Internet;
- Desktop publishing, e.g. Adobe In design, Quark Express, Microsoft Publisher, produce newsletters, magazines and other complex documents; and
• Graphics software, e.g. Adobe Photoshop and Illustrator, Macromedia Freehand and Fireworks, create and edit images such as logos, drawings or pictures for use in DTP, web sites or other publications.

2) **Specialized Applications**

• Accounting packages, e.g., Tally, Sage, Oracle, manage an organization’s accounts including revenues/sales, purchases, bank accounts etc. A wide range of systems are available ranging from basic packages suitable for small businesses to sophisticated ones aimed at multinational companies.

• Computer Aided Design (CAD) is the use of computers to assist the design process. Specialized CAD programs exist for many types of design like architectural, engineering, electronics and roadways.

• Customer Relations Management (CRM) is software that allows businesses to better understand their customers, by collecting and analyzing data, such as their product preferences, buying habits etc. Often linked to software applications that run call -centers and loyalty cards, for example, traditional computer based technologies.

The **C part of ICT** refers to the communication of data by electronic means, usually over some distance. This is often achieved via networks of sending and receiving equipment, wires and satellite links. The technologies involved in communication tend to be complex. You certainly do not need to understand them for your ICT course. However, there are certain aspects of digital communications that you need to be aware of. These relate primarily to the types of network and the ways of connecting to the Internet. Let us look at these two briefly:

i) **Internal Networks**

Network which used to share information between a specific group or peoples of an entity. Internal network is also known as private network. In corporate world internal network mean the entire employ realm login to one common domain “not Microsoft OS domain” to access the enterprise’s shareable application like payroll, health insurance, or emergency services or business development services. These types of applications are proprietary to the particular organization. To share the information between employees or different groups of organization, it requires its own network which is also called as private network or internal network.

This is also usually referred to as a local area network (LAN), this involves linking a number of hardware items (input and output devices plus computer processing) together within an office or building. The aim of a LAN is to be able to share hardware facilities such as printers or scanners, software applications and data. This type of network is invaluable in the office environment where the colleagues need to have access to common data or programs.

ii) **External Networks**

Like we discussed the internal network is the private network and restricted from the outer world. External network is also called public network. A business entity or the corporate provide the information and business solution on the www form or web page to the public on external network of the company, so all the individuals can go the external network and fetch the information from anywhere according to their requirement. External network is provided by the service provider or also called
ICT and Digital Divide

backbone carrier. For example, AT&T “the mother bell” is also known as the backbone carrier or service provider world wide. It means when two remote business entity like to share the private information they can use any service provider network i.e. “External network” to complete their communication path. Often you need to communicate with someone outside your internal network; in this case you will need to be a part of a Wide Area Network (WAN). The Internet is the ultimate WAN - it is a vast network of networks.

2.3.1 ICT in a Broader Context

ICT will almost certainly cover the above examples of ICT in action, perhaps focusing on the use of the key applications such as spreadsheets, databases, presentations, graphics and web design software.

It will also consider the following important topics that deal with the way ICT is used and managed in an organization:

- **The nature of information (the “I” in ICT):** This covers topics such as the meaning and value of information, how information is controlled, the limitations of ICT, legal considerations;

- **Management of information:** This covers how data is captured, verified and stored for effective use the manipulation, processing and distribution of information, keeping information secure, designing networks to share information; and

- **Information systems strategy:** This considers how ICT can be used within a business or organization as part of achieving goals and objectives.

Thus, ICT is a broad and fast-changing subject. A new generation of computer network software aims at building virtual communities: permanent (or at least recurring) online meeting places where people can work and play, buy and sell, gossip and govern, flirt and fight and generally seek their fortunes. The first such places are being built more or less ad hoc. Their builders are mostly innocent of the history of human efforts to shape the spaces where people live so that these might better serve people’s needs and express their dreams. Construction tools appropriate to the physical (i.e. electronic) constraints of shared online environments are rapidly becoming available. But there is no generally accepted conceptual framework for their design, nobody of validated experience to guide their construction. There is not yet any architecture for cyberspace.

In a world so new that its most fundamental properties are still being created (gravity, for example), cyberspace designers confront - consciously or unconsciously many of the classic architectural challenges which may be classified as:

i) Selecting from alternative construction approaches and materials: The “native” medium of cyberspace, a finely woven mesh of polygons with subtly refractive polychrome surfaces, demands more machine resources than most visitors can currently afford to. A richly realized environment is thus, in cyberspace as elsewhere, inevitably an elitist one. Buildings based on simple cubes covered with low-resolution bitmaps are accessible to all, but are also banal and dispiriting. How can we build virtual villages that are at once idiomatic, pleasant to be in and socially inclusive?

ii) Using pre-fabricated elements to reduce costs and speed up construction. Cyberspace is made of software; and software engineers have been wrestling
for decades with a problem that is also central to modern architecture how systems can be modularly designed to make them more economic and more reliable. Here, however, the issues are more complex, since cyberspace communities are built on a constantly shifting infrastructure. In fact, the relationship between structure and infrastructure is all but reversed: how can we design places for human community that can survive a continual re-design of the foundations on which they are built?

iii) Supporting sensible patterns of traffic flow: In most virtual settings, next, ignoring all barriers. People may be present without taking up any visible space, or alternatively their virtual representative (“avatar”) may be so huge or so resource intensive that it fills a space intended to hold a hundred visitors. What is “traffic?” when the users of a space are themselves constructs produced by other (perhaps even antagonistic) designers?

iv) Designing to human scale: In the virtual world, the role of “size” as a design factor is disconcertingly variable. It depends on the visitor’s/user’s field of view and functional reach, which in turn depends on the power of the user’s display and controls. It is like the shift to electronic music, where timbre, volume and tonal range, once given by the physical nature of instrument, become variables, which the composer/performer must learn to control. Issues of appropriate scale do not go away, but must be redefined in relative terms: what is the ratio of sizes that must be maintained to support different experiences?

v) Designing new structures (or re-purposing the old ones) to enhance existing settings: The Musee D’Orsay and the new subterranean entrance arcade created for the Louvre will soon have their analogues in cyberspace; perhaps a conference room smuggled into the design model of an automobile engine, or an entire city whose “streets” are the circuit diagrams of a computer processor. Current work to build a database of 3D mages (the “Digital Human”) to serve as an explorable setting for medical education suggests part of the challenge; how can virtual reality help making physical/natural structures more accessible? The far broader issue is: how can we connect the various virtual environments we build to one another? What design criteria can be established to aid the process of linking new worlds to the old? There would-be cyber-architect navigating this maze of conflicting constraints in search of more than just the solution to a puzzle. In cyberspace as in the physical world, the goal of architectural design is always a place which, while fulfilling its various functions, also communicates something to (and about) the people.

Check Your Progress 2

1) Discuss the meaning of the term information and communication technology?
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2.4 BENEFITS OF ICT

Obviously, there are significant tangible and intangible benefits of ICT:
Can be a powerful enabler of development goals because its unique characteristics dramatically improve communication and the exchange of information to strengthen and create new economic and social networks;

Is pervasive and cross cutting as it can be applied to the full range of human activity from personal use to business and government. It is multifunctional and flexible, allowing for tailored solutions — based on personalization and localization — to meet diverse needs; and

Facilitates disintermediation, as it makes it possible for users to acquire products and services directly from the original provider, reducing the need for intermediaries. This not only become a considerable source of efficiency, but has in fact been one of the factors leading to the creation of an alternative development paradigm that skips the formation of Co-operatives and self-help groups.

It is, thus, evident that ICT has the potential to bring in multiple benefits in the areas of governance, integration of marginalized sections, development of rural areas profitability, and productive improvement in major sectors of the economy. This would provide the much-needed forward linkage by adding value to information for using it as an enabler that has been discussed widely in literature. What need to be tested are the various hypotheses that evaluate the role of ICT and its contribution and impact on the Indian economy.

Till this section we have seen the concept of ICT and its benefits. Let us study about the Digital Divide and its impact in the next sections.

2.5 CONCEPT OF DIGITAL DIVIDE

As evident, the term ‘Digital Divide’ combines two words in itself: ‘Digital’ & ‘Divide’. The term ‘Digital’ here refers to Information and Communication Technology (ICT) while ‘Divide’ means differences, disparity or gap. In general, the digital divide is a phenomenon wherein those who have access to ICT are benefited by the use of it. Their economic well being is ensured in the form of highly paid jobs and more business opportunities, while those who do not have the access to ICT remain aloof of these benefits and hence comparatively they are in a disadvantageous position. The divide does not affect only economically but socially as well. Hence the digital divide is the socio-economic difference between peoples in their access to ICT. The term also refers to gaps between groups in their ability to use ICTs due to varying literacy and technical skills, and the gap in availability of quality, useful digital content. The divide is seen as a socioeconomic problem.

The term was used for the first time in the mid-1990s in reference to the disparity in Internet access between rural and urban United States of America. The idea of the digital divide, as put by some scholars, echoes of reservations against claims of the revolutionary power of the ICT. It is commonly suggested that the ICT is transforming society by bridging the distance or gap. Against this the skeptics have pointed out that ICT is forming a new kind of gap and this gap is known as digital divide. Their argument is based on a hypothesis found in Communications Studies i.e., “the knowledge gap hypotheses”.

2.5.1 Knowledge Gap Hypothesis
The knowledge-gap hypothesis suggests that each new medium of information increases the gap between the informed class and the uninformed class in the society. Those who have access to the new medium will get more information than their counterparts. It was first proposed by Phillip J. Tichenor and his colleagues. However this hypothesis is applicable more in case of print medium than in non-print medium because in case of print medium illiteracy also plays a role to widen the gap. The gap was thought to decrease as television replaces newspaper as a source of knowledge. As compared to newspapers, television requires less literacy. But with the advent of the ICT, in particular the internet, it is feared that the gap may widen, since it is predominantly a text medium.

### 2.6 REASONS FOR EXISTENCE OF DIGITAL DIVIDE

There are many reasons which are responsible for the existence of the divide. Some of them are:

- The non availability of a reliable ICT infrastructure to access the internet. The ICT infrastructure of a country is determined through a number of measures like number of PCs, tele-density etc. ICT is highly advanced technology and it is available with select countries. Hence, other countries have to import the necessary structure. There is lack of resources to invest in information infrastructure, and research and development in most of the developing countries.

- There are problems in accessing the internet regularly. There is the problem of connectivity i.e., availability of a fast, reliable and cost effective internet connection. Then there is the cost of accessing the internet which includes telephone tariff and line rental and cost of Internet Service Provider (ISP). To this may be added the replacement cost of computer. Cost of Internet access may be prohibitive for many low-income households. The quality of service provided by ISP is also important. Because of poor quality of services available due to backward technology it becomes difficult to exploit benefits of ICT.

- Education is one of the major factors hampering diffusion of ICT amongst masses. Only those who are not only literates but computer literates can really benefit from ICT. In developing countries where Governments are still trying to universalize elementary education computer literacy is a far cry. Hence, the divide is bound to exist.

- The availability of relevant material in one’s own language. The most important benefit of the internet is that it is the vast reservoir of knowledge & information. However this knowledge should be comprehensible to those who actually require it i.e., there must be availability of web content in the language of the user. Another challenge for the user is to find the information. The absence of relevant content may act as a barrier to Internet access.

- The digital capacity of the society i.e., e-readiness. E-readiness is the capacity of the society to incorporate ICT in all its pursuits. The e-readiness of the society primarily depends upon availability of skilled human resource that is capable of using, improving, innovating and adapting the new technologies. The different segments of the society viz the households, business, the government etc. should be willing to accept and absorb ICT. The government must provide a regulatory framework by making necessary laws and rules to govern the use of ICT in different sectors of the society. Lesser the readiness, wider the divide and *vice-versa*.
2.7 DIMENSIONS OF THE DIVIDE

The concept of digital divide as presented above may give an impression that it is a clear single gap which divides a society into two groups: information have ands and information have-nots, but the gap is much complex than this simple formulation. In the initial stage the debate on digital divide was focused on the issue of availability of ICT to all at an affordable cost. But now many new dimensions have been added to this debate. An overview of the dimensions of the divide can be presented in following manner:

2.7.1 Global Dimensions of Digital Divide

The global digital divide, refers to differences in availability of the ICT between countries which is reflective of existing economic realities in the world. The developed nations with the resources to invest in and develop ICT Infrastructure are reaping enormous benefits from the information age, while developing nations are trailing along at a much slower pace. This difference in rates of technological progress is widening the economic disparity between the most developed nations of the world (primarily Canada, the United States, Japan, and Western Europe) and the underdeveloped and developing ones (primarily Latin America, Africa, and Southeast Asia), thus creating digital divide.

Between the countries, the divide’s features have common characteristics. The level of national income is strongly related to ICT diffusion and is clearly the distinguishing feature of the divide between industrialized and developing countries. The cost and availability of telecommunications determines the extent to which the Internet is used, and per capita access costs are most often higher in poorer countries. According to the latest UN Human Development Report, industrialized countries, with only 15% of the world’s population, are home to 88% of all Internet users. Barely 6 per cent of the world’s people have ever logged onto the Internet and 85 to 90 per cent of them are in the industrialized countries. Less than 1% of people in South Asia are online even though one-fifth of the world’s population lives here. The situation is even worse in Africa. There are only 1 million Internet users on the entire continent of billion plus people. In the early 21" century; residents of developed countries enjoy many Internet services which are not available in developing & under-developed countries, including widespread internet access, e-commerce, online education etc..

2.7.2 National Dimensions of Digital Divide

Within countries, the digital divide often has common characteristics. Use of the internet is more common among young generation than older one, men than women, the well educated than the lesser ones, urban rather than rural population, and those with higher incomes. In our country some states are ahead of others so far as availability of ICT is concerned. The states like Maharashtra, Karnataka, and Andhra Pradesh etc. are more advanced in ICT as compared to states like Uttar Pradesh, Bihar, and Orissa etc. Further ICT is seldom available in villages where it is needed most. Income level is an important factor since like every other technology ICT has also got a cost and its benefits can be reaped by those who can pay for it. A study has concluded that the penetration rate of ICT for the highest income groups is approximately 7 times larger than that for the lowest income groups. Hence, the poor are largely left out of the ICT. Another significant factor is the level of education, as ICT is basically a print medium. The impact of education will be discussed below while discussing the reasons for the existence of the divide. The gender disparity is also visible in case of use of ICT and in most of the countries the percentage of
females is less than one-third of the population on-line. According to the Human Development Report 1999, the average age of the internet user is in between 30-40 years. However there is a clear increase in all age groups in the world as far as use of ICT is concerned.

### 2.7.3 Connectivity Based Divide

This is an emerging dimension of the divide which has come up due to technological innovations in the field of ICT. A new kind of digital divide based on the usage of more sophisticated, advanced telecommunication technologies — that include broadband, WLANs, PDAs and other new information and telecommunication technologies are emerging. So while developing countries are still in the process of implementing basic telephony services, advanced countries are focused on rolling out wire line and wireless broadband services.

### Check Your Progress 3

1) Whether digital divide is a simple divide between the haves and have-nots?

### 2.8 IMPACT OF DIGITAL DIVIDE

In this section, we are going to discuss the effect of digital divide. There should not be any kind of divide in the society, all should be equal & every benefit should go to all. But it’s a distant dream. In fact there are various kinds of divide in the society & digital divide is one of them. Greater the divide, greater is bound to be the tension between people and in the society. Due to the impact of the ICT the world is becoming a global village. The marketing strategies is adopted by the producers with the help of improved communications technology opposed both rich and poor, equally to the better quality of life, better consumer goods and so on and thus, they aspire for the same. If those aspirations are not fulfilled it may lead to frustration and possibly anti social behavior.

The divide’s impact can be explained as follows:

#### 2.8.1 On Employment

In order to understand the impact of the divide on employment, we have to see how ICT has changed the work scenario in the economy. By removing the obstacles to communication ICT has made work independent of location. ICT has created a new class of skilled workers who are highly paid. There is huge demand of software professionals. The creation of jobs, the nature, content and quality of work, the location of work, the education & skills required etc. is to be determined by ICT. But the question is: Will the information economy be a jobs economy? The World Employment Report 2001 examines this question and is optimistic. There is evidence that employment ratios are highest in those countries where the use of ICT is most widespread. Use of the technologies is nevertheless associated with new patterns of job creation and job loss. And despite the hopeful signs of employment creation, it is
clear that jobs will also be lost through three main channels: obsolescence, automation, and disintermediation.

Certain kind of works, for example, manual record keepers will become obsolete. The producers and consumers can directly interact on-line so that there is no longer requirement of channels of distribution. ICT replaces old tasks and occupations through automation, such as the telephone switchboard operator. But the ICT has also created new jobs such as webpage designers or call-centre workers and a variety of new intermediaries. Hence, those who are skilled in ICT are benefited. In such a scenario if there is digital divide, then those who are at the disadvantaged side have lower job prospects.

2.8.2 On Development

ICT is associated with productivity improvements. The exploitation of the ICT gives industries of a country a competitive advantage. ICT opens up a whole new avenue of economic activities including development of hardware and software, online services, and many others. ICT offers tools that accelerate development and may become shortcut to economic growth. The countries with the right mix of skills, infrastructure, and policies could become important locations in global markets for ICT products generally.

Countries as diverse as Brazil, China, Costa Rica, Israel, Malaysia and Romania have all been able to gain niches in such markets. This benefit of ICT is denied to those countries that stand at the other side of the digital divide. Thus, the existing gap between the developing and developed countries keeps on widening. ICT has spread at an astonishing rate. This has created disruptions and divisions in the world. Disruption occurs because of the inadequacies of existing institutions to cope with the rapid change and new demands. Institutions and organizations that do not cope up would, risk loss, irrelevance and closure. Technological changes are favourable to those who are prepared in advance. The world’s different speeds of change and different stages of preparedness mean that the existing “digital divides” are certain to widen.

2.8.3 On National and Social Interest

Access to the ICT is an important component of civil life. Telephone (including mobile services) is often considered important for of security, and in emergencies. Internet is an important source of many vital information regarding career, civic life, safety, etc. In the unit on e-governance we have seen the use of ICT in governmental functions. In that unit we have seen how the use of the ICT would lead to a healthier democracy by increased public participation in election and decision making processes. Many social welfare services are delivered through ICT. ICT improves social mobility by enabling people to remain in touch with others. ICT plays important role in the learning and career. The existing digital divide works unfairly to all those in the lower socio-economic status and all the above mentioned benefits do not accrue. In the ultimate analysis it is national and social interest which suffers.

Check Your Progress 4

1) What are the harmful effects of the digital divide?

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2.9 MEASURES TO BRIDGE THE DIVIDE

Those who are on the less favorable side of the divide have less opportunity to take part in new ICT based economy, in which more and more jobs are related to computers. They have fewer opportunities to take part in the education, training, shopping, entertainment and communications as compared to those who have access to ICT.

Since, now more people are regularly making use of ICT, people who lack access to it are at an increasing disadvantage. Therefore increasing the number of people who have access to ICT is of vital importance. So now it is imperative to bridge the divide. The solution lies in the problem itself and ICT is the very tool that can be used to bridge this divide. There are certain steps which can narrow down the divide if not completely close it. These have been mentioned below:

1) **Providing internet access at public places**
   The first step to be taken in this direction is to solve the problem of non-availability of infrastructure. Since it is impossible to give everyone the required infrastructure there can be community approach i.e. all have access to common facilities which are available at public places like schools and libraries. The lack of infrastructure & financial resources in many countries suggests that access at public locations will be a relatively cheaper means for increasing internet access and use. These could either be publicly owned libraries, community centres, etc. or private cyber cafes, internet cabins. Increasing Internet connectivity in public places would effectively improve the internet access and use by those who cannot afford computers.

2) **Education matters most of all**
   Education is vital for reaping the advantages from the emerging ICT era. The promotion of education and literacy generally, and digital literacy in particular, is a basic step to bridge the divide. Educational differences underlie the different rates of penetration of ICT and Internet usage. Efforts have to be made to provide computer education along with schooling. Providing computer only is insufficient, teachers need to be trained in ICT. Besides the school goers, large part of the existing workforce also needs to be trained in ICT. Training them taking into account their needs is the key to narrow the digital divide.

3) **Exploring the various forms of ICT**
   Besides the Internet, there are other information and communications technologies which can be helpful. International Telecommunication Union has reported that mobile phones diffuse faster than the Internet. Thus, mobile phones can become alternative routes of getting information because they are not as demanding as computers and the PC-based Internet in terms of cost and skills. Even illiterates can use them.

4) **Government policies and support**
   Enhanced governmental support in the form of budgetary allocations, lower taxes and a regulatory framework are essential for the transition to the ICT
society. Besides economic support the presence of an appropriate telecommunication policy is also necessary. The deregulated telecommunications market in the European Union has led to a substantial decline in access cost and a sharp rise in Internet users. Clearly-defined national strategies promoting the development of the Internet and other ICTs – as in the U.K., Japan, or Korea – accelerate the diffusion of Internet use through government sponsored projects.

5) Uneven distribution of ICT
Last but not the least understanding the causes of the uneven distribution of ICT across countries is the most important step in bridging the digital divide. As we have seen that digital divide has got many dimensions. Further, there are various factors responsible for the existence of the digital divide, bridging the digital divide is more complicated than merely providing computers and internet connections. Bridging the divide has to promote both broader access to and effective use of, the Internet. It requires cooperation between governments, the private sectors, and non-governmental organizations.

Check Your Progress 5

1) In what way access to ICT can be provided to those who can not afford it?
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2.10 SUMMARY

ICT stands for information and communication technology. It is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly it is also concerned with the way these different uses can work with each other. It is very essential for businesses, individual and government.

E-readiness is the degree to which a country/state is prepared to participate in the networked world and demand the adoption of important applications of ICTs in offering interconnection between the government, business and the citizens.

Digital Divide refers to the gap between those who have access to ICT and those who have not. The divide is not a unitary concept but a multi-dimensional problem. Some of its dimensions are:

- Global digital divide i.e. the divide between the countries in their capacity to adopt and use ICT.
- National dimension of digital divide; in a country ICT is not evenly spread in all regions, over all societies. There is also a gender and generation based digital divide.

Due to technological innovations like broadband, wifi etc., there is an emerging connectivity based digital divide. The divide exists because of:

- Non availability of ICT infrastructure;
- High installation and access cost;
- Low level of education and e-literacy;
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- Lack of relevant content in mother tongue.

The divide has adverse impact on:
- Employment
- Development
- National and social interest

Certain measures can be taken to bridge the divide. These are:
- Making ICT accessible to all.
- Universalizing education including computer education.
- Through governmental support.
- Understanding the causes of the divide andremedying them

In India, the position of digital divide is serious both in terms of global and national dimensions of digital divide. Governments have taken certain steps in this direction. Major steps are: (i) Promotion of e-literacy and (ii) E-governance.

### 2.11 SOLUTIONS / ANSWERS

**Check Your Progress 1**

**Fill in the Blanks**
1) (i) Tech Savvy Society and (ii) the Internet, Mobile Phone

**Check Your Progress 2**

1) ICT stands for Information Communications Technology. ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data.

**Check Your Progress 3**

1) Digital divide is primarily the divide between those who have access to ICT and those who have not. But this simple statement does not cover the whole concept of digital divide. The divide has got many dimensions. There is (i) a divide at global level, (ii) a divide at national level, and (iii) connecting boredom divide.

**Check Your Progress 4**

1) Digital divide harms in many ways. It affects people by restricting employment opportunities and through denial of benefits of ICT. If affects countries by slowing down their economic growth and development.

**Check Your Progress 5**

1) Access to ICT can be provided by installing computer systems at public places like Schools, libraries community centre etc. By encouraging private persons to establish internet kiosks will also help in diffusion of ICT.
2.12 FURTHER READINGS


6) *Government of India. Ministry of communication and Information Technology*. 