



What Is This Module About?

Technology is the general term for the processes by which human beings fashion tools and machines to increase their control and understanding of the material environment. In other words, we use technology to make our life easier. We innovate or create advances with the current technology to make things better. This is what technology is about.

The impact of technology is magnified in the field of communication where major changes have occurred in recent years. In this module you will know more about advances in communications.

You will learn the major communication tools used today as well as trends in the development of the technology. In addition, you will learn about the problems faced in using these tools of communication.

This module is divided into two lessons. These are:

Lesson 1 – *Communication Technology Today*

Lesson 2 – *Present and Future Challenges to Communication Technology*



What Will You Learn From This Module?

After studying this module, you should be able to:

- ◆ define what communication technology is;
- ◆ identify the characteristics of modern communication technological tools;
- ◆ explain the trends of development in communication technology; and
- ◆ explain some problems encountered in using modern communication technology.



Let's See What You Already Know

Let's find out how much you know about the topics that will be discussed in this module. For each of the following statements, write **T** if the statement is true and **F** if the statement is false. If the statement is false, explain why.

1. Examples of forms of modern communication using technology are the television, writing a letter and radio.

2. Communication technology makes it possible for you to send and receive messages anytime you want.

3. Television allows people to see places they haven't gone to.

4. Radio reaches a wider audience than television.

5. A document can be sent through e-mail or fax.

6. The Worldwide Web (WWW) is larger than the Internet.

7. The Worldwide Web is a network of linked documents.

8. A fax machine can receive documents but cannot send them.

9. Communication technology always causes greater business productivity.

10. The introduction of communication technology brought about new forms of crime.

Well, how was it? Do you think you fared well? Compare your answers with those in the *Answer Key* on page 21 to find out.

If all your answers are correct, very good! This shows that you already know much about the topics in this module. You may still study the module to review what you already know. Who knows, you might learn a few more new things as well.

If you got a low score, don't feel bad. This means that this module is for you. It will help you understand some important concepts that you can apply in your daily life. If you study this module carefully, you will learn the answers to all the items in the test and a lot more! Are you ready?

You may go now to the next page to begin Lesson 1.

Communication Technology Today

Major technological advances have occurred in the field of communication over the past years. Today, when we talk of human communication, we think of communication through technological innovations like the Internet, cable television, the telephone, etc.

In this lesson you will learn more about communication technology, its features and tools.

After this lesson, you should be able to:

- ◆ define what communication technology is;
- ◆ identify the characteristics of modern communication technological products; and
- ◆ identify the different tools of communication.



Let's Try This

What is communication technology? Write your answer below.

Some of you may know communication technology well. Others may only have a vague idea of it. Well, don't worry, you will find out the answer soon. Read on.



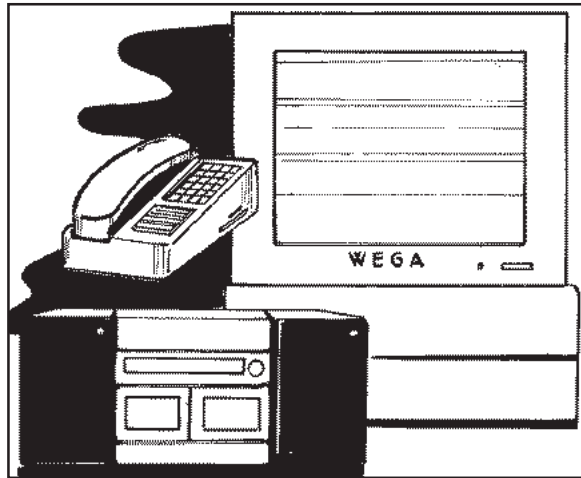
Let's Learn

What is communication technology?

Communication technology is the technology transmitting information through the use of electronic devices and systems.

Based on this definition, think of examples of devices or tools of communication. Write your answers below.

Examples of tools or systems of communication are the telephone, radio, broadcast television and cable TV.



Because most of these devices or systems enable us to communicate over large distances, communication technology has become associated with telecommunications. **Telecommunications** refers to the electronic collection and transfer of information from one location to another. The data being collected may consist of voice, sound, text, video, graphics or all of these. The instruments that send these data include the telegraph, telephone, cable, radio and television. The distance may be as small as within a room or as large as from here to outer space.



Let's Study and Analyze

Study the picture on the right.

What are the two women doing? How do they make use of communication technology?

The two women are talking to each other over the phone. From the clothes they're wearing, you can see that they are far away from each other. Through the telephone, a product and tool of communication technology, the women are able to get in touch with each other despite the great distance between them.





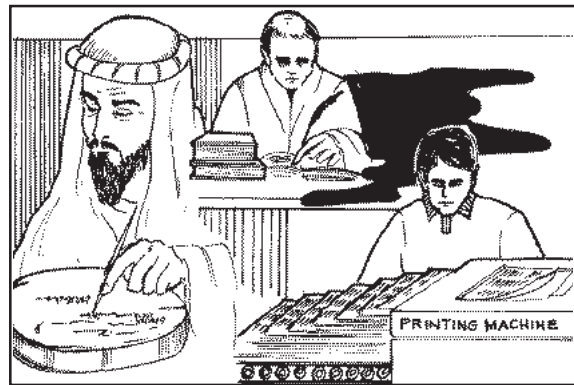
Let's Learn

Characteristics of Products of Modern Communication Technology

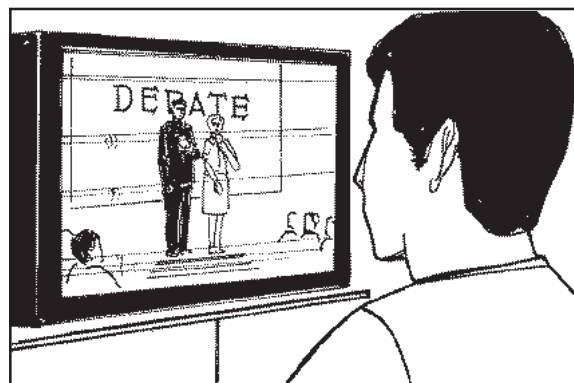
Communication technology has made great advances in recent years. Modern communication technology has characteristics that set it apart from past technology.

1. The key technology underlying all modern communication technology is electronics. In ancient times, before paper was invented, people wrote on clay tablets. For a long time, too, documents were reproduced by copying them by hand. Much of this copying was done in monasteries. Books back then were literally restricted in libraries so that no one could take them. The first major breakthrough in communications was the invention of the printing press by Johann Gutenberg in 1450. This allowed the production of many copies of books.

Electronics and communications have gone a long way since then. The telegraph was introduced, and later the telephone, then radio and television. By the 1980s, electronics and communication had brought about huge changes in the way people exchanged information with each other.



2. All new communication systems are interactive to a certain degree, that is communication is two-way. They involve having the user enter his/her orders or responses to the communication device. For example, popular debate programs ask televiewers to call a given number to give their views on the topic of debate. They ask the viewers if they agree or disagree with a certain statement. At the end of the program, the answers are tabulated. The answers are announced, "According to our viewers . . ." Even if you are not present in the studio where the actual debate is being held, your opinion is still counted.



3. Communication technological devices now have the ability to send and/or receive messages at a time convenient for the users. For example, an answering machine allows you to record a message when the person you are calling is not around. That person can in turn get your message at his/her convenience.



Let's Try This

What tools of communication do you know of?

How many were you able to write? Read on to find out more about the tools of communication technology today.



Let's Learn

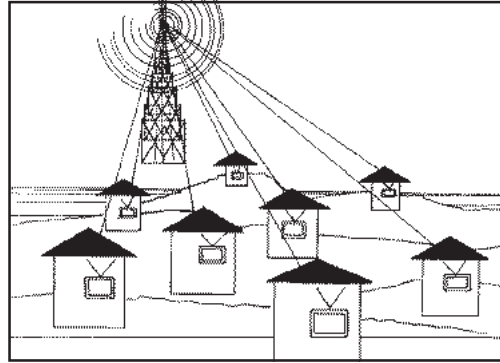
Tools of Communication

As I have mentioned previously, the tools of communication technology include the telephone, radio, television, fax machine and the Internet.

Television

The television is an electronic system of transmitting images and sounds by means of electronic signals sent through wires and optical fibers. These signals are usually broadcast from a source, for example, a television station to reception devices such as the television set in your home. At times, the source transmits the images and sounds to relay stations such as cable TV companies. The cable TV companies then transmit the images and sounds to your television set.

Though most people will never meet the leader of a country, travel to the moon or participate in a war, they can experience these things through the images on their television.



Radio

Radio uses sound effects to stimulate the listener's own images of people and places. The radio was invented in 1906, and for a time it remained primarily as a communication medium. It was devoted to sending and receiving messages especially during the world wars. As it developed it was utilized for two types of service—entertainment and communication. After the war, radio broadcasting started.

Radio reaches a wider audience than television. In provinces where there is no electricity, battery-operated radios are the main sources of news and entertainment. Nowadays, a radio comes as a component of a sound system, which consists of speakers, a CD player, a cassette tape player, a recorder and various switches and buttons that can manipulate sound.



Telephone

The telephone is an instrument that sends and receives voice messages and data. Telephones convert speech and data to electrical energy which is sent through great distances.

A cellular telephone is designed to give the user maximum freedom of movement while using the phone.



Fax machine

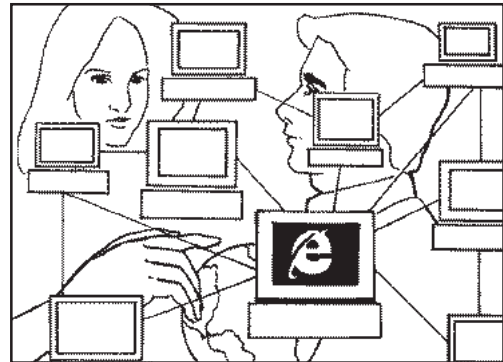
Fax stands for facsimile transmission or reproduction. The fax machine therefore is a system or apparatus for reproducing graphic material over a distance. A document is scanned by a fax machine and its reproduction is produced in the receiving fax machine.



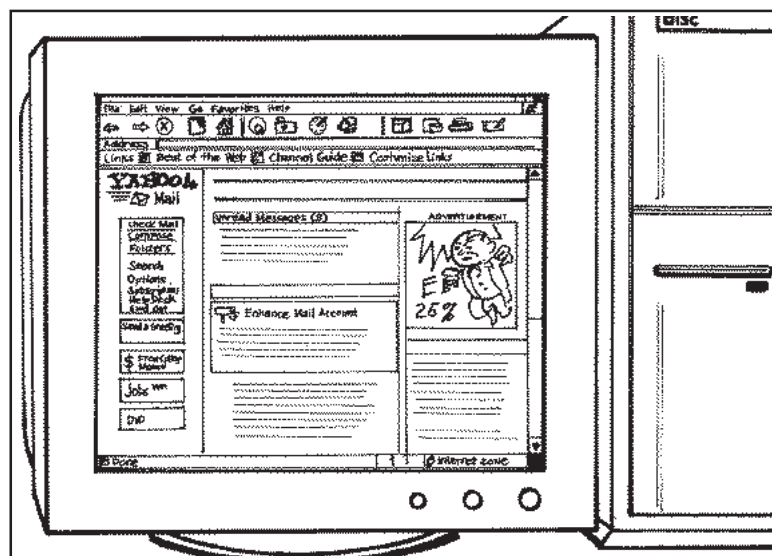
Internet

The Internet is a worldwide system of computer networks. A **computer network** is two or more computers connected to each other. Look at the picture on the right. It shows a computer network. The lines indicate that the computer are linked to each other. The Internet connects millions of computers to each other.

The networks in the Internet can share information with each other. This is normally done through the Worldwide Web (WWW). In the WWW, multimedia files are created, displayed and linked together. **Multimedia files** are texts, photographs, graphics, video and audio materials. These files can be accessed through the Internet.



Aside from the WWW, the Internet has another feature, the electronic mail or e-mail. **E-mail** is the transmission of written messages over the Internet. Unlike letters sent through post, e-mail messages are instantly sent and received. An e-mail message can also be sent to many people at the same time.





Let's Try This

Answer the following questions.

1. If you were given the talent and chance to invent a communication tool, what would it be?

2. Why would you invent such a device?

Now, interview three other people and ask them the same question. Write the answers that you got in the table below.

Name	Ans
1.	
2.	
3.	

Show your answers and the results of your interviews to your Instructional Manager or Facilitator.

Some of the answers that you got may already be here. The answers that you got tell you that people continuously want to make communication easier, faster and more convenient. Who knows, some of the answers that you got may be part of the communication technology of the future.



Let's See What You Have Learned

Let's find out how much you have learned from the lesson. Fill in the blanks with the correct answers. Choose from among the words in the box.

telecommunications
interactive
reactivity
Internet
WWW
television
radio
fax machine
network

1. _____ refers to the electronic collection and transfer of information from one location to another.
2. All modern communication systems are _____, that is, communication is two-way.
3. The _____ is a worldwide system of computer networks.
4. Two or more computers make up a _____.
5. The _____ reaches a wider audience than the television.
6. A _____ can send and receive reproductions of documents.

Compare your answers with those in the *Answer Key* on page 21. Did you get everything right? If you did, that's very good. If you did not, don't worry. Just review the parts of the lesson you did not understand very well before you move on to Lesson 2.



Let's Remember

- ◆ Communication technology is the technology of transmitting information through the use of electronic devices and systems.
- ◆ Electronics brought about many developments in communication technology. Modern communication systems are interactive to a certain degree. They also enable users to send and receive information anytime they want to.
- ◆ Some of the major tools of communication today include the television, radio, telephone, fax machine and the Internet.
- ◆ Television is an electronic system of transmitting images through electronic signals transmitted through wires and optical fibers.
- ◆ Radio transmits sound. It reaches a wider audience than television.
- ◆ The telephone is an instrument for sending and receiving voice messages and data.
- ◆ The fax machine is a system or apparatus for reproducing graphic materials over a distance.
- ◆ The Internet is a worldwide system of computer networks. The key features of the Internet are the Worldwide Web and e-mail.

Present and Future Challenges to Communication Technology

Every day, more and more modern tools of communication are developed. Indeed, modern communication technology pushes human progress to greater heights. However, technology does not come without a price. Technology can be a disadvantage and an inconvenience if not used properly. We have to make good use of technology. In this lesson, we will discuss how you can maximize your use of technology.

After this lesson, you should be able to:

- ◆ explain the trends of development in communication technology; and
- ◆ explain some problems encountered in using modern communication technology.



Let's Try This

Find a friend, neighbor or relative who has access to any one of the following:

- ◆ Two-way radio
- ◆ Cellular phone
- ◆ Fax machine
- ◆ Internet

Ask your friend/neighbor/relative to help you try using his/her communication device.

Which communication device were you able to try? How useful was it to you? Let's find out how modern communication technology helps you live a better life.



Let's Learn

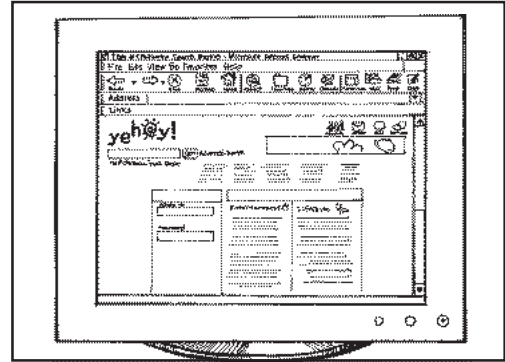
Developments in Communication Technology

Two major developments took place in the field of communication technology in recent years. These are the development and use of networks and the invention of new sending and receiving devices.

Let's discuss each.

Networks

A **network** is a system of interconnected components such as telephones, computers and other related devices. Networks such as the Internet allow exchange of electronic information. Networks can be large or small. The Internet is composed of millions of computers. People in the same building can have their own network of computers. This will allow sharing of information among all computers connected.



New Sending and Receiving Devices

Part of the excitement about telecommunications in the last decade or so has been the development of new devices for sending and receiving information. Two examples are the cellular phone and the fax machine.

Cellular phones allow people to make phone calls wherever they are. People in far-flung areas with no landlines can use cellular phones instead.

A fax machine scans an image and sends a copy of it to a receiving fax machine. The receiving fax machine recreates the image on paper. Fax machines are now common in offices and new uses have been found for them. For example in some countries, newspapers send copies or compressed versions of the news and send them to fax machines to cruise ships in mid-ocean.



Let's Study and Analyze

Read the stories below.

1. Andy is a college student. When he was in high school, he knew nothing about the Internet. But college life introduced Andy to the Internet. His school provides low-cost access to the Internet. Soon Andy became so engrossed with using the Internet that he began to neglect his studies. Each day he would spend hours surfing the Internet, e-mailing friends and chatting. Because he was always surfing the Internet, Andy failed to do his homework and study for his exams. Andy failed in many of his classes.

Why did Andy fail in his classes?

2. Many employees of Kamahalan Company spend an average of one hour a day playing games on their computers, surfing the Internet or chatting on the phone.

How does communication technology affect productivity in Kamahalan Company?

3. Glen made a term paper for his science class. He saved the file in his computer. One night a thief broke into his house and took away his computer. Glen was devastated.

What was the effect of the theft on Glen?

Compare your answers with those in the *Answer Key* on page 22.

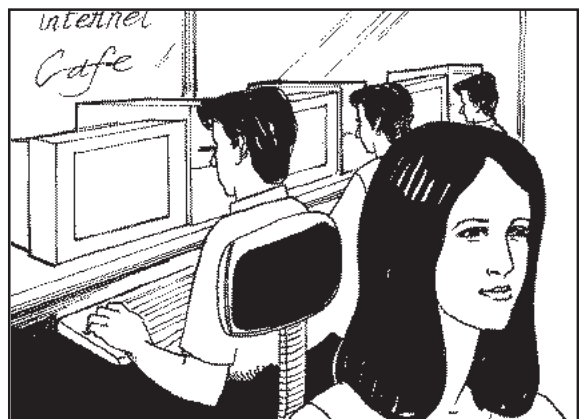


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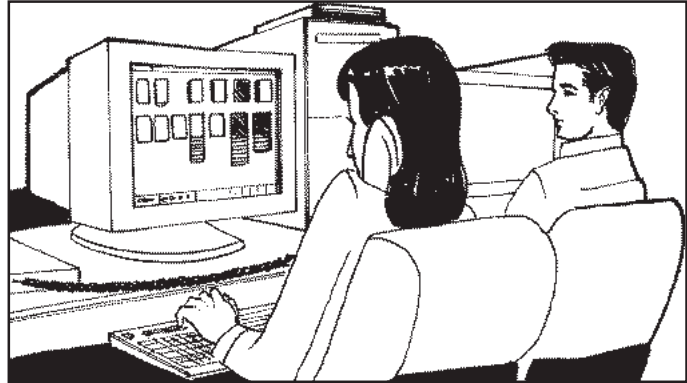
Challenges Facing Communication Technology

The presence and use of modern communication tools can cause inconveniences and problems for us and society as a whole.

Personal Problems. Improper use of communication technology can cause isolation. Communication technology is supposed to link people with each other. However, it can also isolate you from others if you spend too much time using it. For example, instead of spending time talking and interacting with your family, you might be talking to your friends over the phone for hours on end. There have been cases of people spending days, even months, inside their homes, preferring to surf the Net than to go outdoors. This is especially true in countries where you can buy almost anything, from furniture to books to clothes and even food, through the Internet.



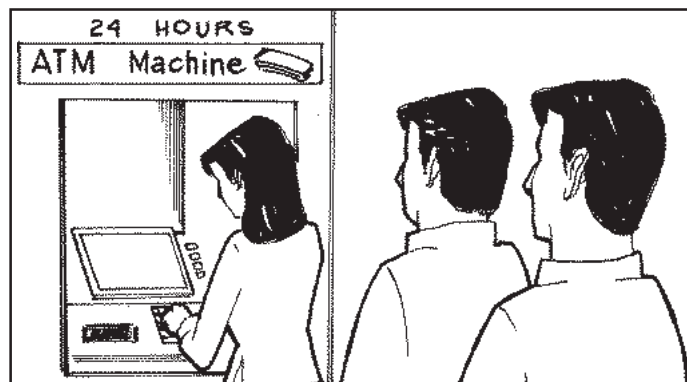
Workplace Problems. Some employees may look busy, staring with crinkled eyebrows into their computer screens. But it could be that they're just playing computer games or surfing the Internet. These activities of course lead to wasted time, resulting in low productivity. Another reason for wasted time is all the fussing that employees do with their computers. For example, if an employee doesn't know how to operate a program in his/her computer, he/she will ask a coworker for help. This lowers the productivity of both employees.



Crimes. Modern communication tools are used by some scheming people in committing crimes. Pirated CDs and cassettes are made with the use of computers and recording tools. Some computer experts work as hackers, people who access private computer files through the Internet and use information from these files to make money.



Loss of Employment. Communication tools have replaced human beings in many tasks. For example, instead of going to the bank and approaching a bank teller to update your bank account, you can now use the ATM machine. Or you can use the Internet to do this. Many stores operate without a single salesperson because their goods are sold through the Internet. Messengers are hardly needed because interoffice communication can now be made through e-mail or fax.



Environmental Problems. Communication devices use up a lot of electricity. Computers, for example, use so much power. It likewise generates a lot of heat that additional power is consumed by air-conditioning systems to keep people comfortable.



People are always rushing to buy the latest versions of computers and other communication devices. The old ones are discarded and pose a potential disposal problem.



Let's See What You Have Learned

Write **T** if the statement is true and **F** if the statement is false. If the statement is false, explain why you say so.

1. The Internet is an example of a network.

2. The subscribers of Smart and Globe are considered part of a network.

3. Voice is transmitted through a telephone in the same manner that a document is transmitted through a fax machine.

4. Communication technology always makes people closer to each other.

5. Workers are always more productive with the presence of modern communication tools.
-
-

Compare your answers with those found in the *Answer Key* on page 22.

Did you get a perfect score? If you did, that's very good. If you did not, that's okay. Just review the parts of the lesson you did not understand very well before you move on to the next part of the module.



Let's Remember

- ◆ The two major developments that happened in communication technology are the development and use of networks and the invention of new sending and receiving devices.
- ◆ A network connects telephones, computers and other communication devices to each other.
- ◆ Communication technology can bring about certain problems if not used properly. It can cause isolation of people, decrease productivity in the workplace, aid in crimes, lead to loss of employment and cause environmental problems.

Well, this is the end of the module! Congratulations for finishing it. Did you like it? Did you learn anything useful from it? The following is a summary of its main points to help you remember them better.



Let's Sum Up

- ◆ Communication technology is the technology of transmitting information through the use of electronic devices and systems.
- ◆ Electronics brought about many developments in communication technology. Modern communication systems are interactive to a certain degree.
- ◆ Some of the major tools of communication today include the television, radio, telephone, fax machine and the Internet.

- ◆ The two important developments in communication technology are the development and use of networks and the invention of new sending and receiving devices.
- ◆ A network connects telephones, computers and other communication tools to each other.
- ◆ Communication technology can bring about certain problems if not used properly. It can cause isolation of people, lower productivity in the workplace, aid in crimes, lead to loss of employment and cause environmental problems.



What Have You Learned?

Let's find out how much you learned from this module. Encircle the letters of the correct answers.

1. This is the collection and transfer of information (voice, sound, text, video, etc.) over long distances.

a. television	c. telephone
b. telecommunications	d. telegraph
2. A/An _____ communication system makes two-way communication possible.

a. interactive	c. fax
b. electromagnetic	d. none of the above
3. The _____ sends and receives voice data. Wireless versions of this technological device were created to give the user freedom of movement.

a. radio	c. facsimile
b. telephone	d. Internet
4. The Internet _____.

a. is a worldwide system of different computer networks	
b. has e-mail	
c. carries the WWW	
d. all of the above	
5. _____ is the key technology underlying all modern communication technology

a. Internet	c. Interactivity
b. Electronics	d. Worldwide Web

6. A network _____ communication devices.
- a. separates
 - b. connects
 - c. speeds up
 - d. slows down
7. Which of the following is an example of a new sending/receiving device?
- a. computer
 - b. cellular phone
 - c. fax machine
 - d. all of the above
8. Communication technology can _____ in a company.
- a. make work faster
 - b. make work easier
 - c. make workers less productive
 - d. all of the above
9. Which of the following can be considered as a communication technology-aided crime?
- a. stealing ATM cards
 - b. stealing other people's documents from their computers
 - c. selling pirated CDs
 - d. all of the above
10. Which of the following statements about communication technology and the environment is true?
- a. Communication technology can help in the efforts to save the environment.
 - b. Using communication technology uses up so much energy.
 - c. Communication technology can hinder efforts to save the environment.
 - d. All of the above.

Compare your answers with those in the *Answer key* on pages 22 and 23.

If you got:

- 9–10 Very good! You learned a lot about communication technology from this module.
- 7–8 Good! Make sure though that you go back to the items you missed.
- 5–6 Fair. Review the part of the module which you didn't quite understand.
- 0–4 Read the module again. I'm sure you'll understand it better this time.



Answer Key

A. Let's See What You Already Know *(pages 2–3)*

1. **F** Writing a letter is not a form of electronic communication. Communication technology require the use of electronic devices.
2. **T**
3. **T** By transmitting pictures and sounds, television allows you to see people you have never met and places you have never been to.
4. **T**
5. **T**
6. **F** The Worldwide Web (WWW) is only a feature of the Internet.
7. **T**
8. **F** A fax machine can send and receive documents.
9. **F** The use of communication technology can also cause less productivity for business companies. For example, the use of computers in making documents that are not related to work robs a company of its workers' time and productivity.
10. **T**

B. Lesson 1

Let's See What You Have Learned (page 11)

1. Telecommunications
2. interactive
3. Internet
4. network
5. radio
6. fax machine

C. Lesson 2

Let's Study and Analyze (pages 14–15)

1. Andy became an Internet addict. He devoted most of his time to surfing and chatting on the Internet rather than to his studies.
2. Workers spend their time on things which are not related to work thus decreasing their productivity.
3. Glen might fail in his subject because of the theft. He has to start from scratch and write his term paper again.

Let's See What You Have Learned (pages 17–18)

1. **T**
2. **T**
3. **T**
4. **F** Communication technology can also isolate people. People can be addicted to the technology that they fail to interact with other people around them.
5. **F** The use of communication technology can also cause less productivity for companies because workers might use this technology in doing things that are not related to work.

D. What Have You Learned? (pages 19–20)

1. **(b)** This is what telecommunications is all about.
2. **(a)** An interactive communication system makes two-way communication possible.
3. **(b)** The telephone and its technological innovations are used in sending and receiving voice data.
4. **(d)** All the items are features of the Internet.
5. **(b)** Electronics has made possible many developments in communication technology.
6. **(b)** Networks connect any number of communication devices. A computer network, for instance, can be made up of two or more computers.
7. **(d)** All of these are new sending and receiving devices.
8. **(d)** Communication technology can have both positive and negative effects on a company.

9. (d) All activities mentioned are crimes aided by communication technology.
10. (d) Communication technology can have both positive and negative effects on the environment. Communication technology can help disseminate information on how to save the environment. However, the use of communication technology can also use up so much energy.



Glossary

Apparatus An equipment, piece of machinery, tool or device used for a particular purpose.

Broadcasting The making and transmission of television and radio programs

Convert To change the nature or form of something, or to be changed in nature or form.

Graphic Representing something in the form of pictures or images.

Optical fibers The technology of transferring information, for example, in communications or computer technology, through a number of thin flexible glass or plastic tubes (optical fibers).

Scan To direct a light-sensitive device over a surface, for example, a document, in order to convert an image into digital or electronic form. This can then be stored, retrieved or transmitted.



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