

## Chapter 4: Communication Systems

### I/ Warm up

# 1 Information and communications technologies (ICT)

**A** In pairs, discuss these questions.

- 1 What is an ICT system?
- 2 How many types of ICT system can you think of? Make a list.
- 3 How can a PC be connected to another computer?

**B** Label the pictures (1–7) with the ICT systems and services in the box.

Fax    GPS    Call centre    Digital radio    Teletext    Wearable computer    Digital TV



1 \_\_\_\_\_



2 \_\_\_\_\_



3 \_\_\_\_\_



4 \_\_\_\_\_



5 \_\_\_\_\_



6 \_\_\_\_\_



7 \_\_\_\_\_

**C** Complete these sentences with words and phrases from B and then read the text on page 136 to check your answers.

- 1 Digital Audio Broadcasting, or DAB, is the technology behind \_\_\_\_\_. DAB is intended to replace FM in the near future.
- 2 \_\_\_\_\_ are designed to be worn on the body or integrated into the user's clothing.
- 3 Most existing TV sets can be upgraded to \_\_\_\_\_ by connecting a digital decoder.
- 4 My grandfather is 75 and he still watches \_\_\_\_\_ on TV to find out share prices, weather forecasts and sports results.
- 5 I work in a \_\_\_\_\_. I receive incoming calls with information inquiries. I also make outgoing calls for telemarketing.
- 6 Please complete this form and send it by \_\_\_\_\_ or normal mail.
- 7 I have a \_\_\_\_\_ navigation system in my car but I don't use it very often. My town is small and I know it well.

## Channels of communication

### What are telecommunications?

**Telecommunications** refers to the transmission of signals over a distance for the purpose of communication. Information is transmitted by devices such as the telephone, radio, television, satellite, or computer networks. Examples could be two people speaking on their **mobile phone**, a sales department sending a **fax** to a client, or even someone reading the **teletext** pages on TV. But in the modern world, telecommunications mainly means transferring information across the **Internet**, via modem, phone lines or wireless networks.

Because of telecommunications, people can now work at home and communicate with their office by computer and telephone. This is called **teleworking**. It has been predicted that about one third of all work could eventually be performed outside the workplace. In **call centres**, assistance or support is given to customers using the telephone, email or online chats. They are also used for **telemarketing**, the process of selling goods and services over the phone.

### Digital TV and radio

In recent years, TV and radio broadcasting has been revolutionized by developments in satellite and digital transmission. **Digital TV** is a way of transmitting pictures by means of digital signals, in contrast to the analogue signals used by traditional TV. Digital TV offers interactive services and **pay multimedia** – that is, it can transmit movies and shows to TV sets or PCs on a pay-per-view basis. It is also **widescreen**, meaning programmes are broadcast in a native 16:9 format instead of the old 4:3

format. Digital TV provides a better quality of picture and sound and allows broadcasters to deliver more channels.

Digital Terrestrial TV is received via a **set-top box**, a device that decodes the signal received through the aerial. New technologies are being devised to allow you to watch TV on your mobile. For example, **DMB (Digital Multimedia Broadcasting)** and **DVB-H (Digital Video Broadcast-Handheld)** can send multimedia (radio, TV and data) to mobile devices.

Audio programs (music, news, sports, etc.) are also transmitted in a digital radio format called **DAB (Digital Audio Broadcasting)**.

### Mobile communications

Thanks to wireless connectivity, mobile phones and **BlackBerrys** now let you check your email, browse the Web and connect with home or company intranets, all without wires.

The use of **GPS** in cars and PDAs is widespread, so you can easily navigate in a foreign city or find the nearest petrol station. In the next few years, GPS chips will be incorporated into most mobile phones.

Another trend is **wearable computers**. Can you imagine wearing a PC on your belt and getting email on your sunglasses? Some devices are equipped with a wireless modem, a keypad and a small screen; others are activated by voice. The users of wearable technology are sometimes even called *cyborgs*! The term was invented by Manfred Clynes and Nathan Kline in 1960 to describe cybernetic organisms – beings that are part robot, part human.

### D Read the text again and find the following.

- 1 the device that allows PCs to communicate over telephone lines
- 2 the practice of working at home and communicating with the office by phone and computer
- 3 the term that refers to the transmission of audio signals (radio) or audiovisual signals (television)
- 4 five advantages of digital TV over traditional analogue TV
- 5 two systems that let you receive multimedia on your mobile phone
- 6 the term that means *without wires*
- 7 devices that deliver email and phone services to users on the move
- 8 the meaning of the term *cyborg*

## 2 Language work: the passive

**A** Look at the HELP box. How do you make the passive in your language? How different is it to English?

### HELP box

#### The passive

We form the passive with the verb **be** + the past participle of the main verb. When we mention the agent, we use **by**.

The passive is often used in technical writing to give an objective tone.

- Present simple passive  
*Information **is transmitted by** devices such as the telephone, radio, TV or ...*
- Present continuous passive  
*New technologies **are being devised** to allow you to watch TV on your mobile.*
- Past simple passive  
*The term **cyborg was invented by** M Clynes and N Kline in 1960.*
- Past continuous passive  
*My TV **was being repaired**, so I couldn't watch the match.*
- Present perfect passive  
*It **has been predicted** that about one third of all work could eventually be performed outside the workplace.*
- Past perfect passive  
*The system **had been infected** by a virus.*
- Future simple passive  
*In the next few years, GPS chips **will also be incorporated** into most mobile phones.*
- Modal verbs in the passive  
*It has been predicted that about one-third of all work **could eventually be performed** outside the workplace.*

**B** Read the article and underline all the examples of the passive. What tenses are they?

A HACKER has been sent to jail for fraudulent use of credit card numbers. Nicholas Cook, 26, was arrested by police officers near a bank cashpoint last month.

Eight months earlier, he had been caught copying hundreds of computer

programs illegally. After an official inquiry, he was accused of software piracy and fined £5,000.

It is reported that in the last few years Cook has been sending malware (malicious software) to phone operators and attacking mobile phones to steal business and personal

information. Cook has now been sentenced to three years in prison for stealing passwords and obtaining money by credit card fraud.

Government officials say that new anti-hacking legislation will be introduced in the EU next year.

**C** Complete these sentences with the passive form of the verbs in brackets.

- 1 Microprocessors (make) \_\_\_\_\_ of silicon.
- 2 Call centres (use) \_\_\_\_\_ to deal with telephone enquiries.
- 3 In recent years, most mobile phones (equip) \_\_\_\_\_ with Bluetooth.
- 4 GPS (develop) \_\_\_\_\_ in the 1970s as a military navigation system.
- 5 Sorry about the mess – the computers (replace) \_\_\_\_\_ at the moment.
- 6 In the near future, the Internet (access) \_\_\_\_\_ more frequently from PDAs and mobile phones than from desktop computers.
- 7 Networks (can connect) \_\_\_\_\_ via satellite.
- 8 I had to use my laptop this morning while my PC (fix) \_\_\_\_\_.



### 3 VoIP technology

**A**  Listen to an interview with Sue Reid, a specialist in telecommunications. What is her prediction about the future of VoIP?

**B**  Listen again and answer these questions.

- 1 What exactly is VoIP?
- 2 Does the recipient need any special equipment?
- 3 What is an ATA? What is its function?
- 4 What is the advantage of Wi-Fi phones over mobile phones?
- 5 Do you need to have a VoIP service provider?
- 6 What is *spit*?



A wireless VoIP phone

**C**  Using the diagram, explain VoIP technology in your own words.



## 4 Mobile phones

**A** Label the mobile phone with features from the box.

LCD screen    Brand    Built-in camera  
 Changeable faceplate  
 SIM card (Subscriber Identity Module)  
 Wireless support    Keypad    Ringtone



**B** In pairs, describe your mobile phone. Use A and the *Useful language* box to help you.

### Useful language

My phone is a ...    It's got a ...    With the ..., I can ...  
 The best feature is ...    I never use the ...    I mostly use it for ...

**C** In pairs, discuss these questions.

- 1 How much money do you spend on your mobile?
- 2 Can you send MMS (multimedia messages) from your mobile?
- 3 Do you access the Internet from your mobile? Which sites do you visit?
- 4 Can you listen to music and watch TV on your mobile?
- 5 Do you use your mobile phone for business? Do you think it is secure to carry out financial transactions via mobile phones?
- 6 Do you ever use your phone while driving?
- 7 Have you ever had to use your phone in an emergency?
- 8 Do you think that prolonged use of mobile phones can affect our health (for example cause fatigue and headaches, emit radiation, excite brain cells, etc.)?



*An Apple iPhone combines three products – a mobile phone, an iPod, and an internet device with email, web browsing, maps and searching*

**D** Write a summary of the discussion in C as if you were posting it on a blog. Show your summary to other members of your class so that they can add comments.

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