CAMBRIDGE

Professional English in Use

ICT

For Computers and the Internet

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Contents

WORD BUILDING

TYPICAL LANGUAGE FUNCTIONS IN ICT ENGLISH

Introduction

Who is this book for?

ICT stands for Information Communications Technology, and describes the technologies we use in our daily lives to communicate. This book therefore looks particularly at the language of computing and the Internet but you'll also find topics such as mobile phones and video conferencing.

Professional English in Use ICT is designed for intermediate to advanced level learners who need to use the English of computing and the Internet for study and work. Computers have evolved so quickly that thousands of new jargon words are used to describe devices that didn't exist before. That's why this book is also suitable for people who use computers at home and want to improve their general knowledge of English and computers.

You can use this book on your own for self-study, or you can use it with a teacher in the classroom.

Why study ICT Vocabulary?

There are social, linguistic and educational reasons for studying this type of language.

Just read the technical specifications of your PC or explore a few websites and you will soon realize that English is the language of computers and the Internet. For example, lots of professionals, from engineers to desktop publishers, have to read technical documentation in English. In fact, in many companies English has become essential for working with computers. Besides, ICT English offers peculiar vocabulary, syntax and discourse functions that can be beneficial for developing your linguistic competence.

We hope this book will facilitate your interaction with computers and help you communicate more effectively in this digital world.

How is the book organized?

The book contains:

- 40 thematic units plus one introductory unit, each occupying two pages. The left-hand page presents and explains ICT lexical areas. The right-hand page allows you to practise and extend your vocabulary.
- An answer key to the exercises.
- An index, which lists all the words and phrases introduced in the book, with the unit numbers where they appear; it also shows you how they are pronounced.

The units cover a wide range of topics from multimedia PCs and Internet issues to mobile phones and robots. It does not, however, require specialist knowledge of computers on either the part of the learner or teacher.

How are the units sequenced?

The introductory unit provides learners with some tips and techniques for learning vocabulary. Then the topics go from computers today to computers tomorrow. Unit 1 is about living with computers; Units 2–9 deal with hardware components; Unit 10 with health and safety; Units 11–18 with software and jobs in computing; Units 19–29 range from computer networks and the Web to e-commerce; Units 30–32 are about future developments; Units 33–36 deal with word-formation processes and collocations. Finally, Units 37–40 focus on some typical language functions in ICT English.

The left-hand page

This page introduces the new words and expressions for the unit. It is divided into sections indicated by letters (A, B, C), with simple, clear titles. Lexis is presented, and shown in bold, using different techniques:

- A short definition of a computer term
- A paragraph explaining an ICT concept or describing a computer device
- A diagram or picture illustrating a technical process, how computers work, etc.
- A situation where some words and uses are presented in context
- An authentic or adapted text from an original source

The right-hand page

This page contains exercises to practise the lexical items presented on the left-hand page.

Sometimes the exercises concentrate on using words presented on the left-hand page in typical contexts. Other exercises take the form of a crossword or other type of puzzle, or a diagram, which will help you remember computer terms.

There are also matching exercises and word-building activities which revise the use of prefixes, suffixes and compounds. Some units contain true/false exercises and texts to complete.

In some exercises you will be asked to recognize the new word in order to do a task.

A lot of the sentences are taken from the Cambridge International Corpus, from computer magazines and from websites, so they are related to the learner's own experience.

'You and computers' activities

These are an important feature of the book. The main aim is to personalize and develop the language in the unit. There are two types of activities:

- *Follow-up activities*
  These give you the chance to put into practice the words studied in the unit, and to develop your language skills by writing about or discussing topics relating to your studies or professional situation.
  Self-study learners can do these as written work. In the classroom, they can be done as a speaking activity.
- *Activities based on the* Professional English in Use ICT *website*
  These are based on links to external websites which have been carefully selected for their interesting topics and accessible language. You will be asked to look up words, give definitions, answer reading comprehension questions, etc. Answers are provided on the *Professional English in Use ICT* website. See www.cambridge.org/elt/ict.

Cartoons

The cartoons about computers and the Internet are intended to liven up the technical content of the book. We hope you enjoy them!

How should I use this book?

- The book presents ICT topics in a gradual development, from computer essentials to more sophisticated issues, so we recommend that you go through the units in sequential order. This will help you understand the basic aspects first and then proceed to more complex matters like networks.
- You may prefer to study only those units you are interested in. For example, you may want to focus on particular units like Internet security and online banking.
- A third possibility is to use the Index at the back of the book. You can use it to look for specific ICT terms and then go directly to the units in which they appear.

Don't forget!

- Use a notebook or a file on disk to write down important words and expressions.
- The *Professional English in Use ICT* website at www.cambridge.org/elt/ict gives you more opportunities to develop your knowledge through the Web. The site is related to *Infotech*, a comprehensive English course for computer users, by Santiago Remacha Esteras, published by Cambridge University Press.
- If you need access to a dictionary, you can visit the Cambridge dictionaries website at www.dictionary.cambridge.org or an online computer dictionary on the Web, e.g. www.webopedia.com.

0 Learning vocabulary: tips and techniques

A Guessing meaning from context

Some ICT terms are difficult, but others are universally accepted. You probably know terms like *modem*, *online*, *chat*, *email*, *website*, *virus* and *hacker*; they are part of our everyday life.

When you meet an unknown word, first try to guess the meaning from the context – the surrounding words and the situation.

Read the text on the right and see how words have meaning in relation to other words.

- You know that a *PC* is a type of 'computer' and *digital music* relates to 'music on computers'.
- You can guess that *are digitizing* is a verb because it derives from 'digit', it is in the form of the present continuous, and it goes with the subject 'families' and the object 'home movies'.
- Words change their shape by adding prefixes and suffixes; for example, we add the prefix *inter-* to *net* and form *Internet*, and we add the suffix *-age* to *store* and form *storage*. (See Units 33 and 34.)

The birth of a revolution

Kids use PCs to do homework, access information via the Internet for research, communicate with pals, play video games and collect digital music. Parents, too, use the PC for communication and entertainment but also let it handle mundane tasks like balancing the checkbook, monitoring investments, preparing tax returns, and tracking the family's genealogy. With the advent of more powerful PCs with greater storage capacity, families are digitizing home movies and photos are stored on the home computer. *Miami Herald*

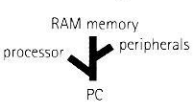
B Organizing vocabulary

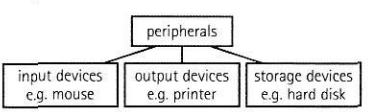
Read the text again. You can organize words in your notebook in different ways.

	How?	Examples
■ Meaning	definition	*The Internet is a global network of computers.*
	lexical family	*digit (root), digital, digitally, digitize, digitizer, digitized*
	synonyms	*handle = manage; advent = arrival*
	translation	*storage = almacenamiento (Spanish)*
■ Word class	(n), (v), (adj), etc.	*communication (n); communicate (v)*
■ Word building	prefixes	*Internet; research*
	suffixes	*information; investment; powerful*
	compounds	*chequebook (cheque + book)*
■ Collocations	word partners, phrases	*access information; handle tasks*

BrE: chequebook
AmE: checkbook

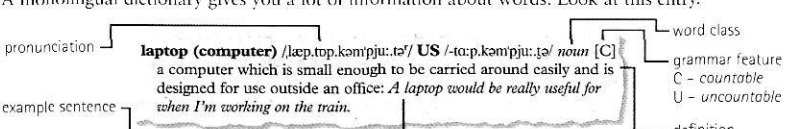
Word trees and spidergrams can help you build up your own mental maps of vocabulary areas. You can make diagrams to classify things.





C Using a dictionary

A monolingual dictionary gives you a lot of information about words. Look at this entry.



(Cambridge Advanced Learner's Dictionary)

Use a bilingual dictionary if you find it easier. You may like to look at some Cambridge dictionaries at www.dictionary.cambridge.org. For ICT, you can also use an online computer dictionary.

0.1 Look at the words in the box. Are they nouns, verbs or adjectives?

financial	Internet	electronic	print	design	microchips

0.2 Read A opposite. Complete this text with words from exercise 1. Use the context to help you.

A digital era

Computers have changed the way we do everyday things, such as working, shopping and looking for information. We (1) ..... houses with the help of PCs; we buy books or make flight reservations on the (2) ..... ; we use gadgets that spring to life the instant they are switched on, for example the mobile phone, the music player, or the car ignition, all of which use (3) ..... . Many people now work at home, and they communicate with their office by computer and telephone. This is called 'teleworking'.

With the appropriate hardware and software, a PC can do almost anything you ask. It's a magical typewriter that allows you to type and (4) ..... any sort of document. It's a calculating machine that makes (5) ..... calculations. It's a filing cabinet that manages large collections of data. It's a personal communicator that lets you interact with friends. It's a small lab that helps you edit photos and movies. And if you like (6) ..... entertainment, you can also use it to relax with games.

0.3 Match the words in exercise 1 with the following definitions.

1 tiny pieces of silicon containing complex electronic circuits
2 to make or draw plans for something
3 relating to money or how money is managed
4 involving the use of electric current in devices such as TV sets or computers
5 the large system of connected computers around the world
6 to produce text and pictures using a printer

0.4 Organize these words as in B opposite.

mobile phone	interact	communicator	teleworking
calculating	calculations	typewriter	

■ Meaning	definition	(1) ..... : working at home, while communicating with your office by computer or telephone
	lexical family	calculate, calculator, (2) ..... (3) .....
	synonyms	gadgets = small devices
	translation	switch on = (4) .....
■ Word building	prefixes	(5) .....
	suffixes	(6) .....
	compounds	(7) ..... (8) .....
■ Collocations	word partners	print a document; make calculations

0.5 Look at this dictionary entry. Put these labels in the correct place.

1 pronunciation
2 definition
3 example sentence
4 grammar feature
5 word class

a ..... b ..... c .....

data /deɪ.tə/ US /-ţə/ *group noun* {U}
information, especially facts or numbers, collected for examination and consideration and used to help decision-making, or information in an electronic form that can be stored and processed by a computer:
The data was/were collected by various researchers. Now the data is being transferred from magnetic tape to hard disk.

d .....
e .....

(Cambridge Advanced Learner's Dictionary)

You and computers

Find a dictionary and look up the meaning of these words. 1 hardware 2 software

1 Living with computers

A Computers: friend ...

People who have grown up with PCs and microchips are often called the digital generation. This is how some people answered when questioned about the use of computers in their lives.

'I have a **GPS, Global Positioning System**, fitted in my car. With this navigation system I never get lost. And the **DVD recorder** is perfect for my children's entertainment.'

'I use an **interactive whiteboard**, like a large touchscreen monitor, at school. I find computers very useful in education.'

'**Assistive technology**, for people with disabilities, has helped me a lot. I can hardly see, so I use a **screen reader**, a program that reads aloud onscreen text, menus and icons.'

'This new **HMD, head-mounted display**, allows me to watch films, and enjoy **virtual reality**, the artificial environment of the latest video games.'

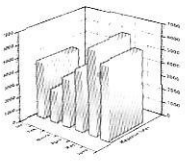
'The upgraded **wireless network** at my university is great: we can connect our laptops, PDAs and Wi-Fi cell phones to the network anywhere in the campus. Communication is becoming easier and easier.'

B ... or foe?

- Our society has developed **technological dependence**. When computers are down, our way of life breaks down: planes stop flying, telephones don't work, banks have to close.
- Computers produce **electronic waste**, plastic cases and microchips that are not biodegradable and have to be recycled or just thrown away.
- They are responsible for health problems, e.g. **computer addiction**, an inappropriate and excessive use of computers.
- **Cybercrime**, crime committed with the help of computers, is creating serious problems.
- Citizens may feel a **loss of privacy** because of unauthorized use of personal data or receiving unwanted electronic messages.

C Things we can do on the computer

A publication


A business graph

Web pages and email


Photo editing

A secretary: 'I use computers to do the usual office things like **write letters** and **faxes**, but what I find really useful is email. We are an international company and I **send emails** to our offices all over the world.'

A publisher: 'We use PCs to produce all sorts of texts in digital format. We **publish e-books** (electronic books) and interactive e-learning programs on CD, and we help a local company to **design** an **online newspaper**, displayed on the Web.'

A bank manager: 'We use financial software to **make calculations** and then generate graphs or charts. We also use a database to **store information** so that it can be easily searched.'

A home user: 'I like to **retouch photos** on my computer; I improve them by making a few touches and then save them on a CD. I also enjoy looking at music portals on the Web. I **surf the Web** every day and I often **download files**, I copy music files from the Net to my PC.'

1.1 Complete these sentences with words from A opposite.

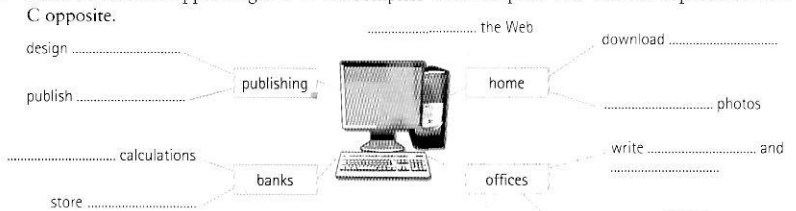
1 The ..... is a piece of software that interfaces with your PC and allows you, via keyboard commands, to get any text information read to you in synthetic speech.
2 A ..... , as popularized by virtual reality, lets the user immerse him/herself in a synthetically generated environment.
3 An ..... is a touch-sensitive device where a special pen or your finger can act as a mouse.
4 Tony Adams is now the proud owner of a dark silver Vogue, complete with leather interior, ... navigation, and a ..... with LCD TV screens.

1.2 Which computer use in A do these pictures illustrate?

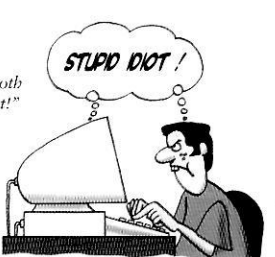
1.3 Read B opposite. What problem do these sentences refer to?

1 We are sorry to announce that most flights are delayed or cancelled.
2 He should go to a psychologist. He spends hours surfing the Web.
3 Technology changes so quickly that we have to scrap computers when they become obsolete.
4 I've been getting emails about offers for lots of different products.
5 My computer system has been broken into and some useful information has been destroyed.

1.4 Some words often appear together in IT. Complete these computer uses with word partners from C opposite.



Computer and man both thinking "Stupid Idiot!"



You and computers

Make a list of the ways you use computers at work and in your free time.

2 A typical PC

A Computer essentials

B Parts of a computer

A computer is an electronic machine that accepts, processes, stores and outputs information. A typical computer consists of two parts: hardware and software.

Hardware is any electronic or mechanical part of the computer system that you can see or touch.

Software is a set of instructions, called a program, which tells a computer what to do.

There are three basic hardware sections.

1 The **CPU** is the heart of the computer, a microprocessor chip which processes data and coordinates the activities of all the other units.

2 The **main memory** holds the instructions and data which are being processed by the CPU. It has two main sections: **RAM** (random access memory) and **ROM** (read only memory).

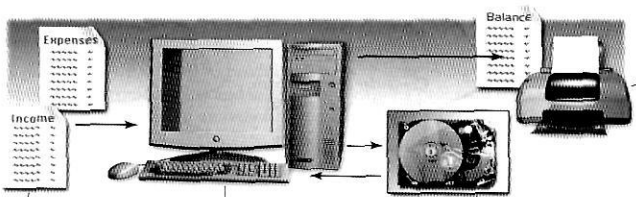
3 **Peripherals** are the physical units attached to the computer. They include:
Input devices, which let us enter data and commands (e.g. the keyboard and the mouse).
Output devices, which let us extract the results (e.g. the monitor and the printer).
Storage devices, which are used to store information permanently (e.g. hard disks and DVD-RW drives).
Disk drives are used to read and write data on disks.

At the back of a computer there are **ports** into which we can plug external devices (e.g. a scanner, a modem, etc.). They allow communication between the computer and the devices.


USB connector


USB ports

C Functions of a PC: input, processing, output, storage



Output
We can see the result on the screen or in printed form.

Input
We enter data with a keyboard, a webcam, etc.

Processing
The data is manipulated according to program instructions.

Storage
We keep data and programs in memory systems where they are available for processing.

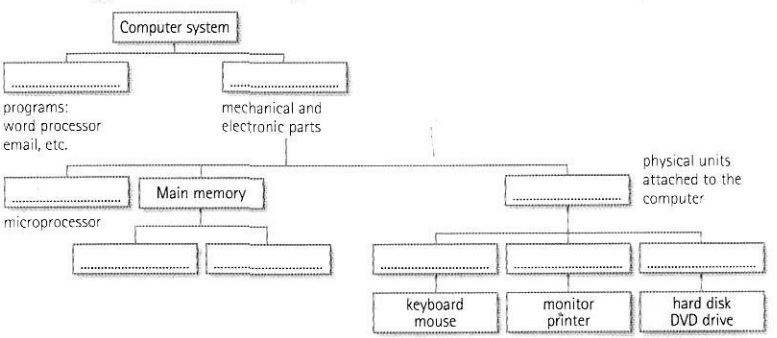
2.1 Look at A opposite. Read these quotations and say which computer essential they refer to.

1 'Accelerate your digital lifestyle by choosing a Pentium at 4.3 GHz.'
2 'Right-click to display a context-sensitive menu.'
3 'You will see vivid, detailed images on a 17" display.'
4 'This will produce high-quality output, with sharp text and impressive graphics.'
5 'Use it when you want to let the grandparents watch the new baby sleeping.'
6 'Press any key to continue.'

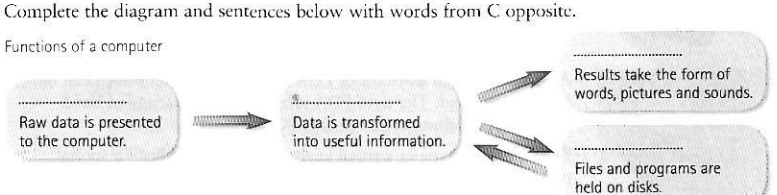
2.2 Match the terms with their definitions.

1 CD/DVD drive	a any socket into which a peripheral device may be connected
2 speaker	b device used to produce voice output and play back music
3 modem	c mechanism that reads and/or writes to optical discs
4 port	d device that converts data so that it can travel over the Internet

2.3 Look at B opposite and label this diagram with the correct terms.



2.4 Complete the diagram and sentences below with words from C opposite.



1 Computer ..... is the visible or audible result of data processing – information that can be read, printed or heard by the user.
2 The CPU will process data as instructed by the programs you're running. ..... includes functions like calculating, sorting, editing, drawing and searching.
3 DVDs are expected to replace CDs as ..... devices.
4 As a scanner, the Sigma-100 can be used to ..... photographs as well as documents into the computer.

You and computers

Access the *Professional English in Use ICT* website at www.cambridge.org/elt/ict.
Then do the activity Computer history.

3 Types of computer systems

A From mainframes to wearable computers

A **mainframe** is the most powerful type of computer. It can process and store large amounts of data. It supports multiple users at the same time and can support more simultaneous processes than a PC. The central system is a large server connected to hundreds of terminals over a network. Mainframes are used for large-scale computing purposes in banks, big companies and universities.

A **desktop PC** has its own processing unit (or CPU), monitor and keyboard. It is used as a personal computer in the home or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh. It's designed to be placed on your desk. Some models have a vertical case called a tower.

A **laptop** (also called a **notebook PC**) is a lightweight computer that you can transport easily. It can work as fast as a desktop PC, with similar processors, memory capacity, and disk drives, but it is portable and has a smaller screen. Modern notebooks have a **TFT** (Thin Film Transistor) **screen** that produces very sharp images.

Instead of a mouse, they have a **touchpad** built into the keyboard – a sensitive pad that you can touch to move the pointer on the screen.

They offer a lot of connectivity options: **USB** (Universal Serial Bus) **ports** for connecting peripherals, slots for memory cards, etc.

They come with **battery packs**, which let you use the computer when there are no electrical outlets available.

A **tablet PC** looks like a book, with an LCD screen on which you can write using a special digital pen. You can fold and rotate the screen 180 degrees. Your handwriting can be recognized and converted into editable text. You can also type at the detached keyboard or use voice recognition. It's mobile and versatile.

A personal digital assistant or **PDA** is a tiny computer which can be held in one hand. The term PDA refers to a wide variety of **hand-held** devices, palmtops and pocket PCs.

For input, you type at a small keyboard or use a **stylus** – a special pen used with a **touch screen** to select items, draw pictures, etc. Some models incorporate **handwriting recognition**, which enables a PDA to recognize characters written by hand. Some PDAs recognize spoken words by using **voice recognition** software.

They can be used as mobile phones or as personal organizers for storing notes, reminders and addresses. They also let you access the Internet via **wireless** technology, without cables.

A **wearable computer** runs on batteries and is worn on the user's body, e.g. on a belt, backpack or vest; it is designed for mobile or hands-free operation. Some devices are equipped with a wireless modem, a small keyboard and a screen; others are voice-activated and can access email or voice mail.

3.1 Look at A opposite. Which type of computer do these descriptions refer to?

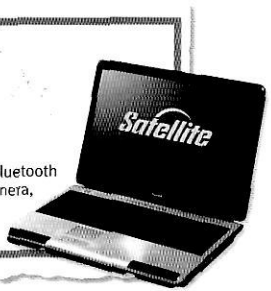
1 a hand-held computer which can be used as a telephone, a web explorer and a personal organizer
2 a typical computer found in many businesses and popular for home use
3 a large computer used for intensive data processing and often linked to many terminals
4 a small computer that fits into items of clothing
5 a portable computer that can be closed up like a briefcase, but it can be as powerful as a desktop PC
6 a full-function PC, though it only weighs 1.2 kg – you can go to a meeting and write your notes on it, like a paper notepad; its screen mode can be changed from portrait to landscape

3.2 Look at the computer advertisement and find this information.

1 What type of computer is advertised?
2 What kind of screen does it have?
3 Which pointing device replaces the mouse?
4 What type of ports does it have for connecting cameras and music players?
5 What sort of power supply does it use?

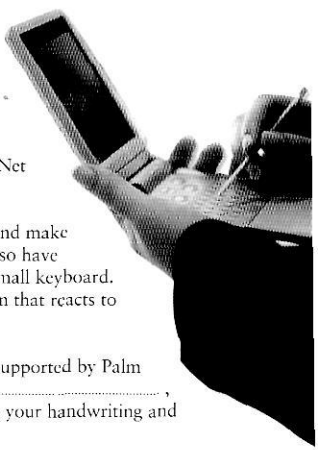
Toshiba Satellite

- Intel Centrino processor
- 1,024 MB RAM, 100 GB hard disk drive
- DVD SuperMulti (+/-R double layer) drive
- 15.4" widescreen TFT active-matrix LCD display
- 85-key keyboard and touchpad
- 2 memory slots, 1 PC Card or PCMCIA slot
- Wireless communications: Wi-Fi compliancy and Bluetooth
- 4 USB ports for connecting peripherals: digital camera, MP3 player, modem, etc.
- 6-cell rechargeable Lithium-ion battery pack



3.3 Read this interview with Adam Hawkins, an IT manager, and complete it with words from the PDA section opposite.

Interviewer: What are the basic features of a PDA?
Adam: Well, a typical PDA is a (1) ..... device that runs on batteries and combines computing, phone and Net capabilities.
Interviewer: And how do you enter information?
Adam: For input, you use a (2) ..... or pen to write and make selections on a (3) ..... ; they also have buttons for launching programs. Some models have a small keyboard. They may have a (4) ..... system that reacts to the user's voice.
Interviewer: Do they need special software?
Adam: Yes, most of them run on *Windows Mobile*. Palmtops supported by Palm Inc. use *Palm OS*. Pen-based systems include (5) ..... , so you write on the screen and the computer recognizes your handwriting and inserts the appropriate letters.
Interviewer: What sort of things can you do with a PDA?
Adam: You can store personal information, take notes, draw diagrams and make calculations. Many PDAs can access the Net via (6) ..... technology.



You and computers

1 Write down two benefits and two limitations of PDAs.

2 Explain in a paragraph how laptops can be beneficial to business people.

3 Write three examples of how tablet PCs can be used in the classroom.