Learning Objectives

The *activities* attribute of the comprehensive assistive technology (CAT) model, developed by the authors and presented in Chapter 1, has six main categories, of which three are categorized as fundamental activities and three as contextual activities. The assistive technology required to support blind and visually impaired people in carrying out activities in the fundamental activity categories, mobility and communication and access to information, has been discussed in previous chapters. Most blind and visually impaired people do not require assistive technology to support activities in the third category, cognitive activities.

This chapter and Chapter 18 will discuss the assistive technology required to support blind and visually impaired people in carrying out contextual activities. This chapter will focus on the technologies required for daily living, whereas Chapter 18 will consider the technologies required to support blind people in education, employment and recreational activities. The chapter will also consider the solution of accessibility issues associated with communications and information technologies other than computers and the Internet, telecommunications and print media. Despite being a component of one of the fundamental activities rather than a contextual activity, this access to information and communication topic fits logically into this chapter, since it includes the use of smart cards and information kiosks, which are mainly used in daily living applications.

As the name implies, daily living involves a wide range of different activities that are carried out on a regular basis, often every day or even several times a day. Most of these activities take place in the home environment, though some of them, such as shopping, take place outside it. The CAT model is used to provide the categorization of daily living activities required in order to provide a comprehensive treatment of the assistive technology needed to support these activities and enable blind and visually impaired people to live independently in their home setting. The assistive technologies used to overcome accessibility barriers in daily living range from simple low technology devices to very sophisticated and specialized high technology devices, giving the chapter a large number of subsections and coverage of a very wide range of different types of engineering solutions. The chapter provides descriptions of devices and, in some cases, details of the engineering principles involved.
The learning objectives for the chapter include the following:

- Using the CAT model as a framework for categorizing the assistive technology used in daily living.
- Obtaining an overview of the wide range of assistive technology solutions used in daily living applications.
- Understanding the engineering principles of some of the assistive technology solutions.

### 17.1 Introduction

This chapter provides an overview of some of the technologies that are used to aid blind and visually impaired people in performing everyday activities. On the one hand, a number of different, very useful, and often ingenious devices are available. On the other, many of these devices are quite expensive, often several times the cost of the equivalent devices for sighted people, and there is nothing like the range of choice available to sighted people. There is also very little information about the extent to which different devices are used and what blind and visually impaired people think of them. It is also possible that lack of information and high costs are preventing blind and visually impaired people obtaining all the devices they could benefit from. There are also issues of whether device design is always as good as it could be or whether some people are discouraged from using particular devices due to factors such as appearance, poor quality documentation or difficulty in using the device. In some application areas, assistive devices are not available or there are only a few products and devices that are designed specifically for blind and visually impaired people. On the other hand, there are a number of products and devices where vision is not required or which have been designed using good design principles, including Design for All, so they can be used by a wide range of people, including blind and visually impaired people.

Most devices are available with English language markings for controls, English speech for the audio interfaces and English documentation. A number of devices are available that also use a selection of European languages. Although there are probably additional devices in other languages about which little information is available in Europe, blind and visually impaired people who do not speak English and require devices with speech output or documentation in languages other than English could experience some problems.

The *activities* component of the CAT model presented in Chapter 1 is used to provide the structure for the presentation of the different assistive technology solutions considered in this chapter. Figure 17.1 shows the components of this third level branch of the model, which will be used to systematically detail the assistive technology solutions available. Thus, *daily living* involves a wide range of activities relating to personal care, care of the home environment and health. Most, but not all, of these activities are carried out in the home, but associated daily living activities, such as the use of money and shopping, are also included.