

Technology for life.



supporting blind and
partially sighted people

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Technology for life.

Technology is transforming the lives of blind and partially sighted people.

RNIB Scotland, alongside our partners and supporters, is playing an important role in this by:

- Raising awareness of technological solutions.
- Providing training and support services.
- Promoting tele-healthcare solutions.
- Improving access to products and support.
- Working alongside cutting edge technology companies.

Today there are literally thousands of products designed to help people remain independent and to make living with sight loss easier. Every month new products are developed, expanding the opportunities afforded to those living with sight loss.

In this Digital Age of the internet, personal computers, mobile phones, and multi-channel television, people with sight loss need no longer be left behind. Increasingly, with appropriate support, they can access the same world of exciting possibilities.

Domestic, work, leisure, education, shopping, travel – these and other activities are starting to be revolutionised in terms of accessibility. People with sight loss, who have hitherto been reliant on the assistance of others, are now gaining increasing control over their lives.

Technology is not a catchall solution to the barriers and disadvantages faced by blind and partially sighted people. Traditional, often simple, aids continue to play a central role. However, technology can unquestionably transform everyday living - at home, at work and in the community.

How technology is enhancing accessibility.

Many of today's products designed to make living with sight loss easier boast a capacity, compactness, output and versatility that vastly outperform the low tech/no tech equipment that preceded them.

Recent technological advances have improved the following functions:

Accessibility – technology has enabled information, which at one time was only available on paper or on viewing screens, to be accessible in digital formats that can be quickly altered, enhanced visually or converted into speech or braille. Voice-recognition systems may even render keyboards obsolete.

Alan Dudley, from Edinburgh, said: “Being totally blind since birth, a significant development has been the introduction of braille displays. My braille note-taker enables me to write documents in braille, convert them into text and send them by e-mail. Conversely, e-mails sent by others are automatically converted into braille and are therefore literally at my finger tips. Wonderful!”

Versatility – many new technology devices are now multi-functional and can carry out a multitude of tasks to maximise their utility. For example, some mobile phones can now also act as dictaphones, bar-code readers,

mobility guides all in one. The Milestone device allows users to carry up to ten books on it or use it as a dictaphone.

Amanda Burt, from Aberdeen, said: “The Victor Stream is the only MP3 player I've been able to work. It is so easy to use and it speaks all functions. I am able to listen to books, music and podcasts on it, also able to record either notes or meetings on it. The built-in microphone is excellent. Copying material from the computer is very easy to do as well. My life has changed so much with these pieces of technology.”

Capacity – the sheer amount of information and software that devices can now carry in their memories (or download from elsewhere) has vastly increased the amount of tasks they can perform or work they can allow their users to perform. A thousand-page encyclopaedia can now be carried on a tiny memory stick.

Compactness – new technology has allowed for a miniaturisation and portability that was unimaginable a generation ago. Output devices can now be carried in pockets. Vast amounts of information can be stored directly onto them or on equally small storage devices.

Immediacy – the almost instantaneous transfer of vast amounts of digital information has massively reduced the gap between requesting and receiving text, graphics, audio-files, etc.

While the growing number of people with sight loss has led to greater demand, too often they have been faced with substantial additional costs. A basic microwave oven costs around £60 on the high street. An equivalent which ‘talks’ you through the controls can cost as much as £250. Specialist software for a computer that allows text to be read to you can range from £800 to £1,500.

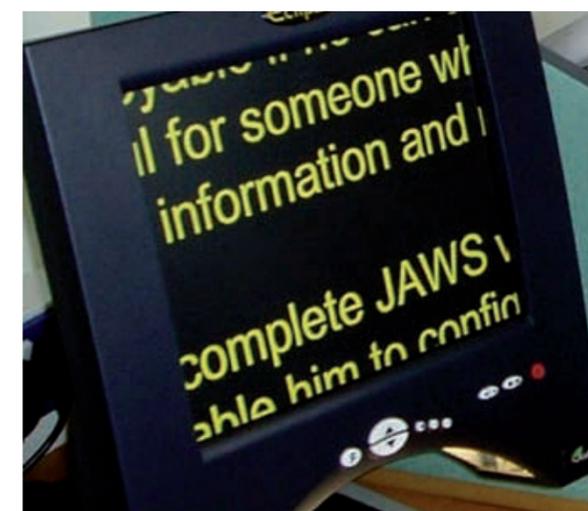
However, there is a growing trend towards incorporating accessible features into mainstream products as standard which is a very positive development. RNIB Scotland is committed to ensuring that the needs of blind and partially sighted people keep pace with technological change.

Transforming Everyday Life.

Assistive technology has made many everyday tasks that can present barriers to blind or partially sighted people easier, increasing their ability to retain independence.

Computing

Screen magnifiers, for example, are now standardised in many computers. On-screen text can be manipulated in terms of font-type, size and colour. Backgrounds can be altered to optimise colour contrast with text. Speech Reader software can convert written text into spoken words, while Optical Character Recognition software can scan hard copies of text and convert these into word files on computer or speech.



Screen Reading software works with a computer using a speech synthesiser to provide access to software applications and the internet. The tone and speed of the voice can be altered to suit personal taste, and there are options to customise for beginner, intermediate and advanced users. Speech can also be outputted to a braille device, while some applications allow text to be saved as a MP3 audio-file.

Elizabeth Prior, from Glasgow, said: “I found the glass magnifiers I was first given for reading cumbersome and awkward to use. The reading surface was so small I rarely used them. Then I came across video magnifiers based on small scale CCTV technology. These devices allow magnifications from two times to fourteen times. They have a light to illuminate text and various modes to assist with contrast. There is also an image-capture facility which can freeze the picture of an awkward to reach item in a shop and bring it close to the eye. I would never be without these as they have given me tremendous freedom.”

Reading

Reading for people with sight loss once meant waiting for books to be transcribed into bulky volumes of braille or entire sets of cassette tapes. Even simple actions like book-marking, checking an index or going back to a previous chapter could prove difficult. Today, software such as DAISY (Digital Accessible Information System) allows the reader far greater ability to navigate text, while most books can easily fit onto a single disc. More transcribed books will hopefully become available.



A **DAISY Player** enables the user to listen to all their audio content on one machine with easy navigation by chapter, page or bookmark. The number keypad helps to navigate complex books and to add and skip to your bookmarks when revising. The highlighted bookmark enables you to mark sections so they can be quickly returned to.

Ken Reid, from North Berwick, said: "I started reading audio books when they were still produced on cassettes, I migrated to CDs and now load my books on an SD card that can hold up

to 20 books at a time – enough to keep even the most avid reader busy on a fortnight's beach holiday! I appreciate being able to speed up the reader's voice and to skip through the document quickly and accurately. I use my player for much more than just audio books, with newspapers and magazine also available in audio format and an MP3 facility available for playing music."

Communication

A new generation of smart phones, tablets and personal recording devices share and improve on the accessibility features of computers such as screen magnifiers. The latest iPhone features in-built speech and magnification software and touch-screens, you sweep your finger across the screen and the device will read out what's on it. Many applications (apps) can be downloaded for free or a small cost, for example, times of buses and train times, shopping or social networking.



Mobile Phones (with an added speech option) - Touching any button announces dialled numbers, phonebook entries and menu options. It announces incoming caller-names and, if they are stored in the phonebook, names are spelt out.

Natalie Curran, from Glasgow, said: "All of the more recent Apple products have an 'accessibility' option within 'settings', which contains an option called 'Voice Over'. There is a page which gives the user the opportunity to experiment with different hand gestures and finger combinations, without anything happening to the machine. However, the best part is it will tell the user the term given to their action, and then explain what it does. My favourite feature is the 'Item Chooser'. This puts all the information on the screen into an alphabetically ordered list with an index at the side. In the 'Search' bar, you can type in any consecutive characters in the option you want, and the list will be narrowed down to the relevant items. This makes a cluttered page very simple and easy to navigate."



Television

The national switchover to digital broadcasting has created new opportunities to open up television to audiences with sight loss. Around 20 per cent of UK programmes are now 'audio-described' – ie, audiences can switch on a verbal explanation of what is happening on screen which is broadcast along with the programme.

With advice from RNIB, Panasonic has launched the world's first range of 'talking' TVs, featuring an on-screen TV guide, the ability to skip up and down channels and set programme reminders.

Kitchen

A wide range of kitchen implements are now available to make cooking easier, more enjoyable and safer. These include 'talking' microwave ovens and measuring devices, for example, scales, jugs, cups - that 'speak' or signal when the desired level of an ingredient has been reached.



A **Talking Measuring Jug** speaks the weight of ingredients contained in it. The jug can be removed from the base and used in a microwave.

Home

Other, often relatively simple, devices make navigating one's home easier. Compact electronic labelling devices that can mark different items in the home, at school and at work and tells the user what they are when activated. Other devices include 'talking' alarm

clocks and watches that allow for good time-keeping.



Pen Friend - This award-winning RNIB product enables people with sight loss or their helpers to record a self-adhesive voice label on a wide range of items - food items, film and music collections, medicine packaging and laundry items.

Sue Marshall, from Edinburgh, uses JAWS speech-reader software to make her computer fully accessible. "It enables me to write letters, labels and my George Hamilton IV fan-club newsletter. It makes you so much more independent because you don't need someone else to help check your work. It makes your work so much more professional looking, too. Without speech-reader software, I'd really struggle to be able to use my computer."

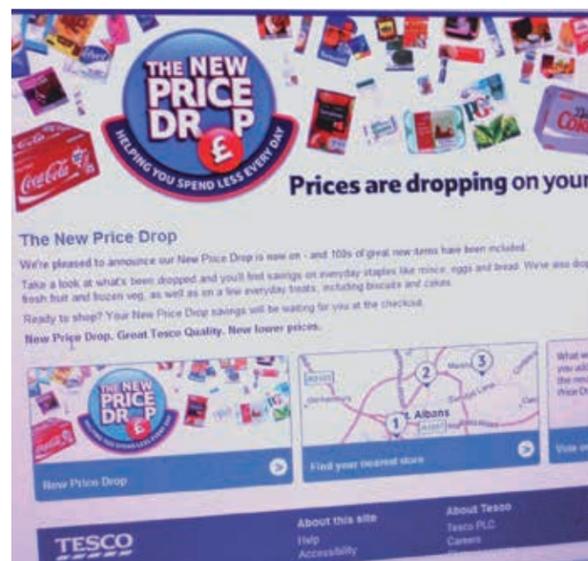
Shopping

New smart-cards, when inserted into a self-service terminus, can automatically configure that machine's display to suit individual accessibility requirements (eg, large print and colour contrast).

An ever-increasing amount of goods and services are now available for sale online. The rise of internet shopping has broadened access to consumer

items for people with sight loss. This negates the need to physically travel to shops, find your way around busy and cluttered interiors, and check pricing.

Many high street retailers – such as Tesco, Sainsburys, Next and John Lewis, now offer web-based services and home-delivery, allowing access to the full range of their goods.



Travel

Access to public transport has been enhanced by systems such as RNIB's 'React' that tells travellers with sight loss what bus stop or train station they are at when they activate a key-fob device. More transport operators are also introducing automatic voice systems that announce what stop is about to be reached. Meanwhile, devices that utilise global positioning technology can tell individuals exactly where they are at any given time. Newly developed 'i-glasses' help prevent wearers bumping into objects by vibrational feedback.

The Trekker

Breeze comes pre-installed with postcode search to enable quick navigation to any UK postal address. It provides spoken route-finding and location information, allowing the user to find out about their surroundings and retrace their route, giving them the confidence to travel independently.



Hussein Patwa, from Port Aberdeen, said: "Satellite navigation allows me to travel independently when and where I want to go. It frees me from a tethered guide and allows me to make the most of opportunities anywhere whilst fitting in with the regular crowd. Using a low-cost, mainstream GPS receiver and a standard Nokia cell phone, I am able to hear turn-by-turn directions guiding me from door-to-door as well as taking advantage of all the other navigation features which sighted people take for granted every day. For the first time I am able to reach my destination independently without worrying if sighted guidance will be present, whilst maintaining my safety and confidence. Its low-cost and ease-of-use makes the technology affordable. It's compact, it's easy and it's my new best friend when I hit the road."

Tele-healthcare

Tele-healthcare - using a range of devices, sensors and services - is helping vulnerable people to live

more safely and healthily in their own homes. Devices such as 'talking' thermometers and diabetes kits help people with sight loss to better manage their medical conditions. Technology is also enhancing health services as well. New digital referral systems will allow high street opticians to confer instantly with hospital eye specialists on images taken of a patient's eyes.

The Talking Blood Glucose Monitor

announces blood glucose readings and provides an audible error message if there isn't enough blood applied to the test strip. It announces each process of the test until it is complete, and all other functions and settings are audible. An alarm reminder notifies when to take the next reading.



Money

Handling money can be a problem when you have sight loss. Simple note and coin-checker devices allow people to differentiate by the size of the denomination, but banks and building societies are also introducing more 'talking' cashpoint machines across the country. This addition of safe and secure audio facilities will help blind and

partially sighted customers access their accounts more easily.

The **Note Detector**, small and lightweight, has a single operating button and is very easy to use. The device gives discrete vibrations according to the note value inserted in it. It can detect Sterling (including Scottish banknotes) and Euros.

Education

The affordability of laptop devices with screen-magnifiers and text-reading software has allowed children and young people with sight loss to be part of mainstream education and, crucially, keep pace with their sighted peers. Indeed, many schools are now using e-books for all their students, eroding the stigma felt by those with sight loss of being different. 'Smartboards', in place of chalkboards, have also enhanced this sense of inclusivity in the classroom.



The large screen **Talking Calculator** announces when each button is pressed in a clear voice, enabling the user to perform scientific, statistical and trigonometric calculations easily.

It comes with headphones and also displays on-screen numbers in 90 point font.

Employment

New technology has significantly broadened the range of jobs that people with sight loss can do, particularly in office or desk-based work. RNIB's 'Notetaker' personal recorder, for example, can access DAISY files and copy other Word files onto it such as agendas or lists. And, in many cases, aides and adaptations can be funded by government schemes. Improved access to education, training and transport have all boosted the ability and confidence of blind and partially sighted people to take up work.

Digital voice recorders have an easy-to-see display and simple button layout, making them ideal for meetings, educational studies and making quick notes. Exterior noise can be blocked out and speed of playback adjusted. A calendar search feature enables access to recordings made on a certain day.



Technology for life.

RNIB is an internationally acknowledged leader in the field of technology for blind and partially sighted people, developing and stocking thousands of products that help those with sight loss and other sensory impairments live full independent lives. In Scotland, we promote these products through our own resource centres and other services such as education and employment.

Working with innovators.

In an increasingly digital world, it is vital that the innovators who create new products are aware of the needs of blind and partially sighted people. We work closely with global companies and university research units in developing accessible phones, televisions, computers, readers, domestic equipment, mobility aids and health care products.

We have, for example, held special events in Apple shops and our own premises, featuring the groundbreaking access afforded through iPhones and iPads.

Working with partners.

We work closely with government, health boards, local authorities, voluntary organisations and small businesses to actively promote access to digital inclusion. We provide workshops that demonstrate the latest digital technologies, and mobile exhibits that showcase technology across Scotland.

In Glasgow, we are working on a project to increase access to technology and other products in partnership with the Scottish Federation of Housing Associations, Glasgow City Council and Action on Hearing Loss Scotland. This will bring digital technologies to people with sensory loss in their homes and neighbourhoods.

Working with volunteers.

Our Technology Support Squad is a team of volunteers throughout the UK ready to help by phone or with a home visit. They help clients:

- Understand instruction manuals.
- Get the most out of television, including setting up Freeview, satellite or cable equipment, installing a DVD player and discovering audio-description.
- Tune into digital radio.

- Stay connected with family and friends with a landline or mobile phone.
- Get to grips with a new computer or laptop, including investigating any problems with software or hardware such as printers and monitors.
- Connect to the internet and social networking.
- Find out if a favourite newspaper or magazine is available from National Talking Newspapers and Magazines.
- Demonstrate how to use a DAISY player and how to order books from RNIB's national library service.

RNIB Scotland.

RNIB Scotland offers technological support to blind and partially sighted people through a telephone helpline, drop-in services and our specially trained Technology Support Squad.

Insight Radio (www.insightradio.co.uk) offers programmes on digital technologies and accessible web sites, up to date reviews and hints and tips on using technology.

Across Scotland, our React system allows people to negotiate busy railway stations through activated guidance messages. We are currently testing out the latest version in a large Edinburgh hotel, while discussions have taken place regarding a possible pilot within a large and complex hospital site.

With support from donors and corporate partners, we offer a loan-scheme that allows schools

across Scotland to borrow aids and equipment to test their suitability for individual students.

Through our employment and learning services, we offer training in using technology to job-seekers and students with sight loss and to retired people seeking to access technology for the first time.



Joint Sensory Services.

Well over one-third of people living with sight loss, aged over 60, also have a hearing impairment. Over the last few years, RNIB Scotland and Action on Hearing Loss Scotland have worked in partnership to improve services to those living with sensory loss and, in particular, access to products and support.

Action on Hearing Loss Scotland, manages a large range of products aimed at providing solutions to people who have hearing loss.

The most popular include amplified alarm clocks, telephones and door-bells, and portable loop systems that can be used in work environments.

A number of products, however, have been designed specifically for those living with both hearing loss and sight loss:

- Amplified tactile phones.
- Vibrating clocks and alarm-pads.
- Tactile timers.
- Vibrating liquid-level indicators.
- Custom-built 'apps' for mobile phones.

These, and others, can be purchased through RNIB Scotland or Action on Hearing Loss Scotland's 'Solutions' catalogue, by phone, e.mail or online from their website at www.actiononhearingloss.org.uk/shop.aspx

In partnership with other sensory loss organisations, we offer:

- Technology workshops that showcase the very latest digital technologies on, for example, mobile phones. A recent workshop attracted over 90 people living with significant sensory loss.
- Mobile technology visits - using mobile resources, we have brought technology to villages and towns across Scotland. In the Borders, we covered 16 separate locations alone.
- Looking Forward / Hear to Help - these programmes have helped to establish peer-support training which is aimed at assisting groups of people with newly diagnosed sensory loss to overcome the barriers to exclusion. As part of this initiative, access to digital technologies is regularly featured.
- Industry events – we have held a

series of special events featuring the groundbreaking access afforded to people living with sensory loss through touch-phones and tablets.



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Technology Consultancy

Our technology specialists provide assessments and advice on all aspects of using technology; in employment, learning and daily living.

For more information contact:
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Resource Centres:

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