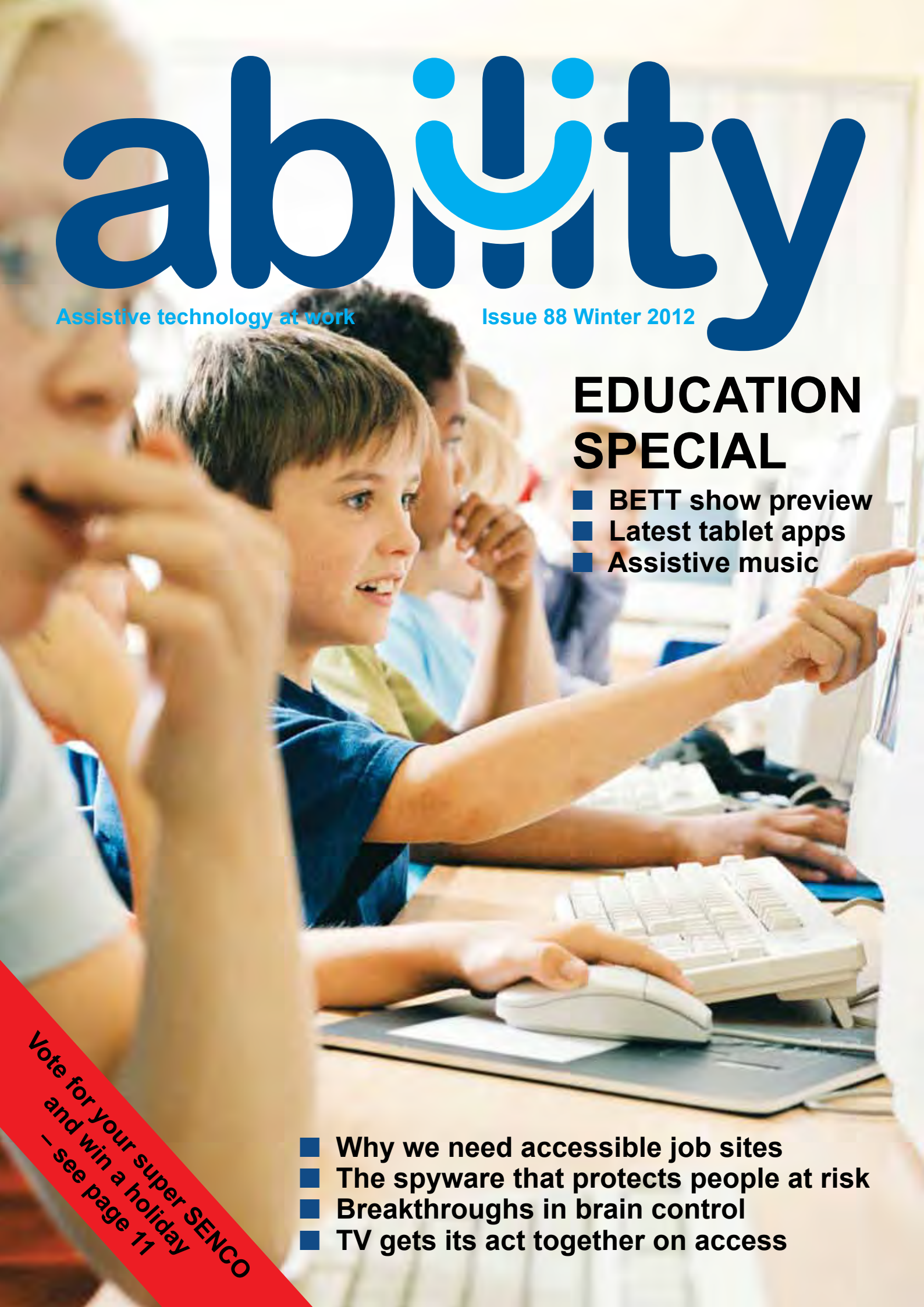
abilty

Assistive technology at work

Issue 88 Winter 2012



EDUCATION SPECIAL

- BETT show preview
- Latest tablet apps
- Assistive music

- Why we need accessible job sites
- The spyware that protects people at risk
- Breakthroughs in brain control
- TV gets its act together on access

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Motability

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Ability is a founder member of the British Assistive Technology Association

Assistive technology has failed to keep pace with the digitial age. 2013 is time for fresh thinking, says John Lamb

Is accessibility fit for purpose?

Is it time to rethink how we deliver accessibility? The business of enabling disabled people to access digital services is usually seen in terms of the assistive technologies that allow people with impairments to go online, use phones, watch television and so on.

Individual disability groups have developed their own set of assistive technologies and services to gain access to digital media.

In many cases the technology is provided through grant schemes such as Access to Work and Disabled Students Allowances, which have formulated their own ideas about what their clients need.

However, it is apparent that this piecemeal approach is not working.

Those who commission systems are baffled by conflicting advice and complex standards. Wishy washy legislation and unconvincing business cases do not help either.

Even the effectiveness of widely accepted standards such as the Web Content Accessibility Guide 2.0 (WCAG 2) in enabling accessibility is open to question.

Some researchers argue that it is perfectly possible for a website owner to meet the guidelines and still have a site that disabled people are unable to access properly.

The TV industry too struggles to provide accessible content and programme guides as changing technology and out-of-date regulation frustrates efforts to provide subtitling, signing and audio description.

At a time when so many activities from receiving healthcare to watching a film are increasingly done online it is vital that systems are accessible to everyone.

What we need is agreement on a core set of assistive technologies that are part and parcel of every digital system and a recognition that the important thing is that users should be able to complete the task they have set out to accomplish.

It is watching the film, carrying out the bank transfer, making the phone call that is the key objective. How that it is achieved is secondary and does not have to be perfect.

That is why AbilityNet's publication 'Mind the Digital Gap: it's bigger than you think' (see page 9) is so important in rethinking our approach to accessibility and shaping new policies to achieve it.

The charity has come up with six proposals for bridging the gap between what technology allows us to do and the ability of everyone to enjoy those undoubted benefits.

Some proposals, such as the idea of tax breaks for inclusive systems along the lines of the solar panel scheme are novel, but all are commonsense.

Do make it a New Year's resolution to read it (http://bit.ly/10EXdOs) and let us know what you think of AbilityNet's ideas. ■

Universal design is key to access says Microsoft

Technology companies are rarely shy when it comes to talking about new products. But it is important to remember that when Microsoft talks about innovation, about the next steps in technology that will change our lives, the company does so in way that remains as inclusive as possible.

During the early days of personal computing, people with visual, hearing, mobility, cognitive or language-related disabilities could find it difficult to take advantage of the new technology, and were at risk of being marginalised both in the jobs market and in the basic matter of communication.

In the past, people with disabilities were fired from jobs because they could not use the technology fully.

Happily, the situation has improved, and Microsoft played its part in this evolution. We have just launched Windows 8, our latest operating system. It represents the next step in the development of software that is truly accessible for all.

We can now customise screen magnification and keyboard controls easily. In addition, screen readers, Braille output displays, speech recognition software and speech synthesizers all make it possible for people with disabilities to use the technology fully.

But most importantly, it embraces the philosophy of universal design, an accessible design model that benefits not just people with disabilities, but also allows people with temporary difficulties such as a broken wrist, or age-related vision impairments, to adapt their technology according to their changing needs.

We believe that accessible design is not only the right thing to do; it is good business practice, because it allows the widest variety of customers to use the products.

For people with hearing disabilities, it means that websites with streaming video or audio files can offer real-time captioning.

For people who can't use their hands to navigate with a mouse, it means websites can be made compatible with devices such as joysticks or puff straws. And better design of text and graphics can make sites easier to navigate for people who have vision disabilities – and for those who don't.

This is just the tip of the iceberg of what may be possible in the future.

As we move to an increasingly interconnected future, where technology plays an ever more important role in our daily lives, it is vital that those at the forefront of our industry don't let those with disabilities get left behind.

Rob Sinclair
Chief accessibility officer
Microsoft

Charity asks where to find funding for AAC devices

I am a speech therapist working for a charity named ESPA in the north east. We support adults with autism with a variety of services including colleges, residential care and a day centre.

There is a clear need across our organisation for alternative and augmentative communications (AAC) aids, and I (along with a few supportive staff members) am looking into fundraising to be able to purchase these devices.

We are interested in setting up a separate charity, or at least making a funding pot exclusively for AAC. I realise there are a number of routes to trial different devices, software and apps but we have difficulty sourcing funding so that the device stays with the individual after leaving our service.

If you could give me any guidance on whom to contact or have any advice it would be greatly appreciated.

Becky Finn
Speech & language therapist
ESPA

Editor's reply: If I understand correctly you are looking for sources of funds that would allow ESPA to buy AAC devices for adults with autism. There are many charitable funds in the UK that you could approach from the Big Lottery through to myriad smaller and more specific charitable organisations.

There used to be a database called Funder Finder, which is alas no more. However, there is a useful list to get started on at Disability Grants (http://bit.ly/ZkPHrB). Other useful resources are to be found at Trustfunding.org.uk (http://bit.ly/TXkKGN) and Scope (http://bit.ly/Sip0lb).

Of course adults with autism can also apply for funding to the NHS or social services and there are moves afoot to make it much easier for children and adults to get access to AAC devices. Communications Matters has more information on this and on sources of funds for individuals (http://bit.ly/W0AtXQ).

Helpful guides are also produced by the Ace Centre (http://bit.ly/RrhjsZ) and by AAC device company Liberator (http://bit.ly/Xh3U3r). Good luck. ■

HAVE YOUR SAY

Ability **welcomes letters and articles on all issues relating to IT for disabled people in work, education and daily life.**

Contributions can be sent to the editor, John Lamb, at john.lamb@abilitymagazine.org.uk

Hidden talents

In the first of a series of columns on web issues, Leonie Watson explains how to remove the barriers that prevent disabled jobseekers from finding work online

In a job market where more and more people with disabilities are losing their benefits and are facing a challenging return to work, some must overcome an additional barrier.

The task of job seeking is made even more difficult because a significant number of employers' websites are inadequate in terms of accessibility for people with disabilities.

Despite our continuing reliance on the internet, there are still a number of sites that are lacking accessibility. Consequently, many disabled people are being excluded from the job market because they are unable to access online information.

Some recruitment sites are failing to provide a suitable service for disabled people because not all web designers, content authors and web communication teams are sufficiently educated in the concept of accessibility.

It is important to understand how these audiences use the internet, so the site does not introduce barriers that prevent disabled people from benefitting from the technology.

According to the 2010 Equality Act, service providers must offer a digital service that is accessible to all. Although the website should be designed in an accommodating way so that every online user can access it comfortably, this does not mean the site has to lack creativity or be visually unappealing.

Accessibility is a creative challenge, not a challenge to creativity.

There are some simple changes that recruitment websites can make to reach a wider audience. For example, a web page that has a simple visual layout, clear sections and headings, and good use of whitespace, will be easier for someone with reading disabilities to use.

Someone who is partially sighted will benefit from a design that uses a plain (san serif) font, a reasonably large text size, and good colour contrast.

The target audience for a recruitment site is the working population of the UK. One in six of those people will struggle with literacy, so using plain and simple language will help more people successfully apply for jobs.

Léonie Watson is director of accessibility at digital agency Nomensa and expert consultant to the Government's GOV.UK website

Even though large bold text stands out for sighted people, web developers need to use good HTML mark-up to give blind people the same experience. When text is wrapped in the right HTML tags, screen readers, software that translates on screen information into synthetic speech, can differentiate it from other content on the page.

Therefore, the text that is designed to look like a heading should also be wrapped in the HTML tags that tell a screen reader it is a heading.

Some recruitment websites have a vast amount of content and an abundance of advertisements. The sheer volume of information can be very overwhelming, especially for someone who has a cognitive disability such as Asperger's Syndrome, as this can make it difficult for them to focus on the important information on the page.

Multimedia content doesn't often appear on recruitment sites, but it can be a challenge for deaf and hard of hearing people when it does. Providing a transcript of the soundtrack, or captions that appear at the bottom of the video screen, will make multimedia content more accessible.

Recruitment websites could encourage advertisers to include additional information for people with disabilities. Is the company an equal opportunities employer for example? Does the venue for the interview have wheelchair access or other facilities for disabled people?

They need to level the playing field because applying for a job should be the same for everyone, particularly in these testing times. For employers and agencies to engage with the greatest number of potential applicants, they need to be confident the recruitment website is not preventing talented people from applying for the job.

It also makes sense for recruitment websites to reach out to the widest possible audience. The success of a recruitment website is largely based on site traffic, so enabling as many people as possible to use it can only improve visitor numbers. ■

Aid for employers of disabled workers

Small businesses will have more money to pay for specialised equipment and other costs faced by disabled people under changes to the disability employment programme, Access to Work.

The scheme provides financial help towards the extra costs faced by disabled people at work, such as specially adapted equipment, travel costs, and support workers.

Businesses with up to 49 employees will no longer pay a contribution towards the extra costs faced by disabled people in work, saving them up to £2,300 per employee.

Disabled jobseekers who want to set up their own business through the New Enterprise Allowance will also be eligible for Access to Work funding from day one of receiving Job Seekers Allowance.

Access to Work advisers will be given more flexibility in deciding which equipment is funded through the scheme.

The Government will also implement a package of measures recommended by the Access to Work expert panel, chaired by Mike Adams from the Essex Coalition of Disabled People.

The measures include funding the physical transfer of equipment, introducing a 'fast-track' application process and working with employers to find more imaginative solutions to support individuals.

The Government has already announced £15m additional funding for Access to Work and the extension of the support to young people taking part in work experience through the Youth Contract. ■

Smartphone app speeds travellers

Disabled travellers could find getting around much easier thanks to a smartphone app that alerts the places they plan to visit of their access needs.

Entrepreneur Gary Macfarlane (pictured) has spent five years developing a system called assist-Mi, which allows users to create a profile of their access requirements and then send it to the locations they intend to visit, along with their time of arrival.

GPS location tracking lets the operators know by phone when the traveller is about to arrive so that the appropriate assistance, such as help with bags, car park barriers and wheelchairs, is available.

The software grew out of an earlier service called Blue Badge Finder, which helps drivers find disabled parking spots. McFarlane says assist-Mi is the first real-time accessibility service.

Companies that run airports, hotels, railway stations, car parks and entertainment venues are among enterprises that McFarlane has approached.

Assist-Mi is available for iPhone, Android, Blackberry and Mobile Windows handsets and is free to users. ■

www.assist-mi.com

Briefs

Sightline Directory

Blind and partially sighted people can now search for services and support in their local area using an online directory launched by the Royal National Institute of Blind People (RNIB). Sightline Directory lists details of more than 1,680 organisations that can support people with sight loss. Users can read reviews and add their own comments, building up a community of useful advice about the many organisations that exist to support blind and partially sighted people.
www.sightlinedirectory.org.uk.

Older users 'more in control'

Older people who use the internet believe they are more in control of their lives, are less isolated and are more likely to feel they can learn a new skill, according to a report called 'Nudge or Compel?: Can behavioural economics tackle the digital exclusion of older people?' produced by the International Longevity Centre. It suggests, among other things, that service providers could attract older customers by offering initial periods of free internet access.
www.ilcuk.org.uk

Cheaper Possum Primo

We published an incorrect price for the Possum Primo in the autumn issue of *Ability* (No 87). The device retails at £853, rather than the £1,500 mentioned, and is available at a discounted price via the NHS Supply Chain National framework Agreement and Scottish Healthcare contracts. Public bodies can access this discount price direct from Possum.
www.possum.co.uk

AbilityNet floats inclusive tax plan

IT charity AbilityNet has called on the Government to give tax breaks to organisations that adopt inclusive digital technology. The idea is one of six proposals designed to close the gap between "technology and people's capabilities to use it".

AbiliyNet is concerned that the UK's 12m disabled people are being disenfranchised by the move to digital services.

"Adults and children face all kinds of challenges. They struggle with inconsistent, badly designed interfaces that mean they fail to complete tasks," the organisation's chief executive Nigel Lewis told a recent gathering in the House of Commons. "They must be included if we are to close the gap. We live in a self-service age – business, government and the third sector are driving users to digital services.

"As the number of tasks we ask people to do digitally grows, the gap grows. [Online] shopping baskets will be unfilled: it is now an economic issue as we enter a digital age."

AbilityNet says that although much has been said about the delivery of inclusive digital systems over the past 15 years, many of them are inaccessible to the majority of disabled and older people.

"For too long the debate about access has focused on issues that are specific to people with disabilities," says AbilityNet in a report entitled 'Mind the Digital Gap: It's bigger than you think'.

"Pursuing legal action to ensure that every website includes alt-tags for people who use a screen reader would be a pointless exercise."

Instead the charity wants to see the adoption of policies that:

- Deliver inclusive and usable services, content and end-to-end solutions. In particular to use task-oriented, user focused testing at every stage of the design process
- Work with technology companies to ensure that they include consistent use of inclusion technologies and practices
- Support the creation of a trusted support service to help disabled and older people to make effective use of digital technologies
- Change how we incentivise digital inclusion through the use of taxation to drive uptake
- Ensure there is a learning environment for all IT and design professionals that embeds inclusion
- Actively encourage advocates in business, government, the third sector and users in a relevant forum so that they work together in a coordinated way.

This autumn AbilityNet commissioned a report from Kevin Carey called 'Universal Citizen Access, Universal Consumer Access A New Approach'.

Carey argues that accessibility should be approached by looking at the complete task, rather than focusing on aspects of assistive technology such as alternative text, text-to-voice, switches and so on.

He also suggests that a set of inclusion technologies is built into all operating systems and user interfaces.

The core set would be consistent across all platforms and would include text-to-speech, speech-to-text, magnification, the ability to configure an interface, task intelligence and location services, where applicable.

Carey also thinks more attention should be paid to helping people with cognitive difficulties, who outnumber those with physical disabilities.

"One of the concerns I have is the expectation that disabled people will have to apply for everything online," said Anne McGuire, shadow minister for disabled people.

"Unless we make a real effort, a significant proportion of the electorate will be left behind and won't be able to overcome the digital gap." ■

http://bit.ly/10EXdOs

EU targets public websites

The European Commission (EC) has announced that it plans to introduce a directive covering access to public sector websites and websites delivering basic services to citizens.

The Commission estimates that there are over 700,000 public sector websites in the EU, only around one third of which are accessible.

The new law will require 12 categories of EU public sector website, providing essential public services to EU citizens, to comply with W3C's Web Content Accessibility Guidelines 2.0 (WCAG 2) at the AA level.

One advantage of the directive, which will have to be enacted in member states by the end of 2015, is that it insists on an objective set of criteria for judging whether a site is accessible or not.

However, in plumping for WCAG 2, the Commission faces criticism from experts such as a group at York University that claims the standard does not guarantee a site is accessible. ■

http://bit.ly/UfTBx2

Lloyds banks on disabled customers

Lloyds Banking Group has announced plans to boost the accessibility of its services in a bid to attract more disabled customers.

The bank is the first to announce it will introduce signing for deaf people on its website and a textphone service that will enable hearing impaired customers to communicate with staff.

It also has plans to convert all its 7,000 automated teller machines (ATMs) so that they can read out what is on screen to customers via plug in headphones.

Under Lloyds' 'disability customer programme', staff will receive disability awareness training including instruction on the needs of customers with dementia.

And the bank has promised to introduce a better system for recording the needs of disabled customers so staff are aware of what adjustments an individual might require.

Lloyds will be adding the SignVideo sign language service to its website. Using a webcam, customers will be able to connect to a British Sign Language (BSL) interpreter who will enable them to communicate directly with the customer service team and deal with their banking needs.

In addition, Lloyds is introducing TexBox, an enhanced form of textphone that allows deaf or hearing impaired customers to use their own mobile or computer as well as a traditional textphone to contact the bank and converse with customer service staff.

Disabilities minister Esther McVey MP and shadow minister Anne McGuire launched Lloyds disability customer programme in the House of Commons, together with Liz Sayce, the chief executive of Disability Rights UK. ■

Tablets boost reading speeds

Back-lighted digital tablets can help people with low vision to read, according to an American study.

People with moderate central vision loss from macular degeneration can increase their reading speed by up to 42 words-per-minute using an iPad, say researchers at the Robert Wood Johnson Medical School in New Jersey.

They tested 100 people with macular degeneration and found they read 15 words-per-minute faster, on average by using an iPad or e-reader.

However, participants gained at least 42 words-per-minute when using an iPad tablet on the 18-point font setting, compared with reading a print book or newspaper.

A more modest gain of 12 words-per-minute, on average, was achieved by those who took part in the trial using a Kindle tablet set to an 18-point font.

"Our findings show that at a relatively low cost, digital tablets can improve the lives of people with vision loss and help them reconnect with the larger world," said Professor Daniel Roth who carried out the study.

"The backlight boosts contrast sensitivity or the ability to see an object stand out from its background. Many people with low vision lose this ability," he added.

"The magnified font and backlight allows them to improve their reading ability and comfort." ■

Briefs

Blind bit of difference

Teams of students at London Business School and University College London have been invited to take part in a competition to devise a business solution that will equip people with sight loss for work. Each team entering the 'Blind Bit of Difference' competition, which has been devised by RNIB, will be paired with a blind or partially sighted person. The results will be announced on March 25 and the winner will get a £2,000 social enterprise award.
www.rnib.org.uk

Giving down by one fifth

Charities providing help to disabled people with assistive technology have been hit by an overall 20% drop in charitable giving in the UK this year. Donations to charities supporting disabled people amount to 4% of the £9.3bn given in 2011/2012, according to a survey by the National Council for Voluntary Organisations.
http://bit.ly/Z3xOh5

Format frenzy

The UK Association for Accessible Formats has released 17 guidance documents aimed at improving the standard of accessible formats. The documents include minimum standards for audio, Braille and large print. The UKAAF has also produced guidance on good practice in terms of quality control, service level agreements and data protection.
www.ukaaf.org.

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Catch-up TV falls behind on accessibility

The TV industry is struggling with accessibility as technology changes

Efforts to persuade companies that supply television on demand to make their services more accessible are being ignored by many of them.

The Authority for Television on Demand (ATVOD) carries out an annual survey to encourage providers to make their on-demand programmes more accessible to people with disabilities affecting their sight or hearing.

However, of 36 services providing television programmes on demand in the UK only 12 carry subtitling, two provide audio description and two operate a signing service, according to the latest ATVOD report.

Only 16 out of 81 companies that deliver television on demand – over the web, on set-top boxes or via digital recorders – responded to ATVOD's questions about their accessibility and any plans they had to improve it.

In the face of such a low response, the regulator is considering making its survey a legal requirement with the threat of fines for companies that do not supply information about their accessibility.

"Every time a new medium arrives we have to fight the same battles all over again," Pete Johnson, chief executive of ATVOD told a recent conference on TV accessibility run by Digital TV Group in London.

Public service broadcasters such as ITV and Channel 4 are doing the most to improve accessibility. ITV, for example, boosted the amount of subtitling online from 10% in 2011 to 64% in 2012.

However, the amount of audio description Sky provided on its Anytime service fell during the same period.

There were a number of issues that are preventing the wider availability of access services, says ATVOD.

Some companies are struggling to transfer access services from broadcast TV to on-demand output, while others have archive material that did not have access services when it was originally transmitted.

Channel 4, which won plaudits for its coverage of the Paralympics, said it will subtitle specific archive programmes on request.

Other content providers face technical barriers in using media players, some of which aren't written or produced in the UK.

At the moment a content provider has to make a whole range of subtitling files available, so that subtitles can be displayed on different software and hardware platforms.

Although television on demand represents only 2% to 3% of total output, says Johnson, it will grow to 15% in coming years.

ATVOD will be exploring possibilities for technical standardisation so that access services can be run on as many different platforms as possible.

UK still leads in accessible TV

The UK is a world leader in making TV accessible to disabled people, but changing technology and creaking regulation are putting the TV industry under pressure to raise its game.

The emergence of on demand or catch-up TV in which content is either streamed to a set-top box, a computer or smartphone, to allow viewing in real time, or downloaded to a recorder or media player, has raised new accessibility issues.

"I meet a lot of deaf people and the UK is the envy of the world for subtitling. We have 85-90% legislated subtitling and signing is strong too," says Terry Riley, chief executive of the British Sign Language Broadcasting Trust.

Talking electronic programme guides and TV sets with voice output, such as Panasonic's range that was launched last year, have also helped disabled people.

Further improvements are likely to come via companion devices such as tablets that work with TV sets to provide access services.

For example, the BBC is looking at synchronising audio commentary via a connected device so that users get audio description over a Bluetooth earpiece.

However, Riley is not happy with the service he currently receives. "Subtitles are often quite poorly done ... We need to look at what we provide now and make sure the mistakes are not transferred to other mediums of TV."

The regulator Ofcom was quick to point out that it is working on the issue. "I have two priorities: to have a serious bash at improving the quality of subtitling, especially live subtitling. My second priority is to ensure people get best value from electronic programme guides," said Peter Bourton, head of content and policy at Ofcom Access Services. ■

Computers will be brain powered in 10 years

Brain computer interfaces were among the novel developments presented at the Recent Advances in Assistive Technology and Engineering conference in Warwick

Computer interfaces that allow users to control systems by thinking about them will be commonplace within the next five to 10 years, according to leading researchers.

Severely disabled people are already using brain power to manipulate wheelchairs, play games, control environmental systems and write messages on social media.

Brain-computer interfaces (BCI) systems pick up electrical signals from the brain via electrodes either in a cap or embedded beneath a person's skin and convert them into computer commands.

The BCI cap from g.tech used in the BrainAble project

"Nowadays brain-computer interfaces are only useful to people who are completely locked in with no muscular activity at all," says Filip Maralles from Institut Guttmann in Barcelona.

"Within five to 10 years BCI will reach a degree of evolution where current barriers are overcome: it will be much better than today's technologies."

Maralles was speaking at the Recent Advances in Assistive Technology and Engineering conference at Warwick University where he demonstrated a system called BrainAble developed as part of a European Commission funded project to develop non-invasive BCI.

BrainAble researchers from Spain, Austria and the UK have developed a software platform for ambient assistive living that can connect to a large number of systems.

The system is controlled by means of a cap like an old-style flying helmet fitted with electrodes.

The platform has been built into a smart home that allows severely disabled people to control domestic appliances and navigate a wheelchair by means of a computer-generated representation of the home.

The 20 people who have tested BrainAble so far have also been able to send emails and other messages and even meet correspondents, represented by avatars in the virtual world.

Mostly users operate software and devices by fixing their gaze on objects including keyboards and options on screen, but the researchers have also been working on detecting imagined movement.

Operating the system requires a great deal of concentration, so users have to switch to other methods of control if they become tired. The BrainAble system not only responds to electrical signals from the brain, but also output from switches and remote controls.

"Our goal is to go into production," says Maralles. "[BrainAble] has some features that make it unique: the ability to be used by users via a wide range of technologies, as well as BCI, and the fact that it very open and can connect to any kind of smart home device."

"It also contains intelligence; it learns from the habits of the user and adapts its interfaces."

There are a number of drawbacks. BCI is slower than other methods of controlling computers such as eye gaze because of the difficulty of picking up the low bandwidth signals and interpreting them.

In addition, electrodes must be positioned very precisely and while some users pick up the system quickly, others struggle to master it.

BrainAble will continue to be developed in a project called Back Home, which is to do with rehabilitating and assessing people who have severe injuries when they return home.

Sheffield opens assistive tech centre

The University of Sheffield is setting up a Centre for Assistive Technology and Digital Healthcare which will be a focus for research into technology for people with disabilities.

The Centre will bring together and co-ordinate more than 30 research and clinical scientists with expertise in healthcare, engineering and social science. It will also invest in a multi-disciplinary research team working in a 'living lab' environment. The Centre will work closely with industry, the NHS, social care organisations and users.

It will carry out fundamental technology-related research into natural speech technology, with applications in telecare, telehealth and assistive technologies, as well as machine learning and inference that could be used in clinical decision support and lifestyle monitoring.

Researchers will also be developing persuasive technology that has uses in the promotion of health behaviour change and self care, and looking at in-home and body sensor networks and communications. ■

Super SENCOs

Those involved in teaching students with special educational needs are living in interesting times, as the Chinese curse has it

The Government's proposed changes to England's SEN system, which will affect some 1.7m children, are still in the pipeline.

But they are likely to see the introduction of single plans covering education, health and social care. This change will be accompanied by a large reduction in the number of children defined as having special needs.

For parents, speaking with a school's Special Educational Needs Coordinator (SENCO) is a starting point if it is not clear why a child is struggling at school. SENCOs work hard to support children with a wide range of challenges, particularly dyslexia.

That is why *Ability* is joining with Techcess and Jabbla in inviting children, parents and teachers to vote for a SENCO that is known to have made a difference to the lives of children with dyslexia.

The SENCO with the most votes will receive an all-expenses paid weekend away to Ghent, Belgium for two. For more information, to vote and to find out how to get almost 40% off your next subscription to *Ability* magazine, turn to page 11 of this issue or go to www.techcess.co.uk/superstarsenco.

The ExCel exhibition centre, London, is BETT's new home

In the meantime, from this autumn, the task of choosing and paying for assistive technology has become the responsibility of schools themselves, making it doubly important for staff to be up-to-date with the technology trends.

And there is no better place to see the latest software and hardware than at BETT. We asked seasoned SEN teacher Stuart Pattison to select some of the products that caught his eye. You can read about his selection on below and on the following pages.

ABBYY

Arriving for the first time at BETT this year is Hovercam. This is an optical document reader and scanner in one from document capture firm ABBYY. It scans in a very short time all types of documents and converts them into word documents that can be read in a much easier form.

This is ideal for people who have challenges reading as well as students with dyslexia. The Hovercam is also targeted at students with autism as it helps reduce the clutter on a document so the information can be processed in a much more effective manner.

The main selling point of Hovercam over many of its rivals is the ability to simultaneously project onto a big screen and link to a computer where the presentation can be saved for a later date.

It has a clever adjustable head which means it can be used in the classroom in a very effective manner and there are many cross curricular uses as well as just the character recognition. When linked to the software, text to speech software enables all students to be able to access what has been scanned by the camera.

Stand: B104

AppWriter

AppWriter is, as the name would suggest, a writing app for the iPad. It was designed in Denmark to aid people with reading and writing problems to word process in a much easier manner. It does this through a series of clever innovations, which all together make for a clever and well designed app.

AppWriter uses the Dyslexie font, which has been proven in studies to be more effective for people with dyslexia due to the clever way in which the letters are shaped in order to aid with discrimination.

This instantly sets it apart from other programs as more accessible. In addition to this, AppWriter uses high quality synthetic voices to read back what has been written, highlighting each word as it is read. This text to speech can be used to read individual words, sentences or selected blocks of text.

In addition AppWriter uses word prediction software

in order to predict what will be written next. The context-specific nature of this software means that errors are reduced and it becomes much easier to write.

The software also contains powerful OCR technology to make it easy to use the iPad's inbuilt camera to help make documents easier to read. All data produced on the iPad is stored locally with easy sharing tools if required giving a great deal of flexibility when out and about. AppWriter is a great example of lots of different innovations being placed into one effective and inexpensive package.

Stand: B102

DB SEN

DB SEN offers one of the first learning platforms designed for young people with learning difficulties. Until now a compromise has had to be made between a primary and secondary solution for Special Schools.

The software is designed to be as accessible as possible using Widget symbols to make it much easier to access. DB SEN works well with clever little touches like picture logins overcoming a challenge faced by many children with learning difficulties.

A great feature that is integral to DB SEN is the visual calendar built into it. This enables students to see at a glance what they have coming, something that is well known to be a successful strategy with students with autism.

Ready-made content focussed on developing key skills is available to make high quality content easy to access for staff and students alike. Communication tools ensure that students can socialise with staff and peers in a safe and secure environment. Virtual mark books and progress trackers make DB SEN worth considering for any special school.

Stand: F46

Dynamo Maths

Dynamo Maths aims to be a complete solution for students with dyscalculia. It provides a three stage solution based on extensive research into the condition. The first stage is a series of over 230 lesson plans that help look at every aspect and gives concrete examples that help build understanding.

These are backed up by high quality online activities. Over 230 modules, each broken down into specific steps, help move learning from the concrete to pictorial stage.

These are backed up by the wide range of reports that can be generated from simple progress reports looking at homework and how effective intervention is working, something that is becoming increasingly important.

The third stage of the Dynamo maths program is dynamic worksheets. These printable worksheets are different each time they are viewed, giving a resource that can be used over and over again The attractive nature of these sheets also helps reinforce the learning.

All in all for a complete solution for students with dyscalculia, the Dynamo Maths program gives a 'one stop' solution for this little understood condition.

Stand: A150

Gripcase

With the increasing numbers of iPads in the classroom comes an additional worry for teachers – sooner or later one will be dropped.

The Gripcase aims to eliminate the slow motion moment as you watch the iPad fall onto a hard floor. The durable foam case fits around the iPad making it comfortable to carry and hold. All four sides can be held making sure that it is always comfortable and indeed can be held by two children at once, making it ideal for shared work.

Gripcase lets you keep a handle on a tablet

One of the cleverest aspects of the Gripcase is the 'crumple zones' built into the corners of the case. These are designed to protect the case when dropped and take the impact before bouncing back into shape.

The cases come into a wide range of attractive colours and are much sleeker and smaller than many other rival products on the market. The Gripcase also has the advantage that it is washable, ideal if being used in and around craft activities.

It is also resistant to stains, daylight and most usefully of all resistant to surface abrasions. The Gripcase is certainly a product that is worth testing yourself.

Stand: F195

Hills Components

Often at BETT it is the new and flashy products that catch the eye and attract a large crowd. While the innovation and attraction of these products is well worth seeing, it is companies like Hills Components that are contacts you will keep coming back to throughout the year.

The company has a solid range of products that offers

top quality and a wide range of the equipment that keeps schools running. In 40 years Hills have built up a strong reputation among special schools for their products.

One of the most popular is its 'unbreakable' headphones. While many special school teachers will openly laugh at the suggestion of something being unbreakable, Hills Headphones are as good as it gets.

In addition, Hills Components' wide range of durable and accessible keyboards for students with special needs and visual impairments make Hills components stand well worth a visit on the way to the other more flashy stands. You will be ringing them long after the gimmicks are forgotten.

Stand: C122

Iansyst

Iansyst is an established supplier of a comprehensive range of software and assistive technology solutions to help people with dyslexia and other disabilities achieve their potential. iansyst's stand will showcase popular established software products for use in schools and colleges, along with the latest product developments CapturaTalk and Azzapt.

The CapturaTalk for Android applications is a tool that makes text content accessible and provides literacy support to improve reading and writing skills on Android mobile phones and tablet devices. It has been short-listed for a BETT award.

Azzapt, part of MyDocStore, is an innovative concept addressing the missing link in creating and transferring accessible files between platforms. MyDocStore aims to make it quick and easy to transfer files between devices whilst simultaneously converting them into the user's preferred format – whether text, audio or a combination of both.

Stand: B130

Jabbla

At The BETT Show 2013, Jabbla is launching a software product that makes reading, writing and spelling a faster and less stressful process for children, young people and adults. SprintPlus is used all over Europe and is making its debut in the UK. SprintPlus software helps children, young pupils and adults with reading, writing, spelling and learning difficulties. It helps in developing the user's reading and writing skills. SprintPlus evolves with the user's needs. It has proven its efficiency in primary, secondary and higher education.

Stand: B112

Microlink

Microlink is showing a new flagship product for schools called the Education Profiler. The Education Profiler is a development tool for primary, secondary and higher education institutions. It assesses, tracks and provides customised recommendations to pro-actively enhance the productivity and continual development of numeracy and literacy skills, for both individuals and entire classrooms.

Stand: B110

Optelec

Optelec has an excellent reputation for magnifiers and a wide range of these will be available to view at BETT. The company is particularly showing off the Compact 7 HD magnifier this year. The slim, light magnifier represents the latest technology from the company and is available in a convenient size.

With a seven inch screen and continuous magnification from two to 24 times size it is useful for a wide range of purposes. The full colour screen can be adjusted to produce a range of high contrast images that provide easy reading.

One useful feature of the Compact 7 is the tiltable screen, which means it can be read in a much more comfortable position and eliminates the problem of trying to wrestle with a document and magnifier at the same time.

With four hours battery life it provides a solution that can be used for long periods without worry. It has an attractive and easy to navigate interface which makes it easy to operate whatever your level. The Compact 7 is a premium product from Optoplec and well worth a look, especially with the free credit card sized magnifiers they are giving away to early visitors.

Stand: C123

Osborne Technologies

Osborne Technologies will be showing off its Sensory Pod, which is an economic alternative to an expensive sensory room. The product was first launched at BETT last year and since then it has been extremely popular with many different organisations.

The Sensory Pod offers a multi-sensory environment that fully surrounds the young person. It can be used to stimulate or calm people with special needs, autism in particular.

One of the prime uses for it is to provide an

environment in which a young person with autism can retreat to in order to be able to cope with sensory issues. This can be extremely effective in an educational setting where they can sustain longer periods within the classroom.

It is not just for schools though. The use of sensory pods in public places is an exciting area of development for the company. The ability for people with mental health issues to be able to have a safe haven in busy work places as well as in public areas is something that can make a huge difference to quality of life.

After travelling to Excel and fighting through the crowds at BETT, visiting the sensory pod should give you a fair idea of its benefits.

Stand: E90

School Font

School Font is a simple writing program for the iPad and iPod. Designed in Scandinavia to help the programmer who developed it overcome challenges when reading, it has now expanded into a quality app.

The joy of School Font is that it functions as a simple uncluttered word processor for Early Years or Special Needs Students. The font is designed in such a way that it makes it as easy as possible to read as well as aid handwriting.

The app reads back the sentence to you. At the moment this feature is only available for Norwegian and Swedish but English support will be added soon. For £1.99 it is well worth a look.

Stand: B128

Skoog

Skoog has been a sensation since its launch at BETT 2010. It is a new kind of musical instrument designed for special educational needs.

By pressing different brightly coloured zones on the cube you can make different noises. Through a clever interface teachers are able to add any number of musical instruments or other sounds to the Skoog

The clever design of the Skoog means that it can be played by all levels of students from those with profound needs to professional musicians as was shown when the Skoog made an appearance at a concert for the cultural Olympiad.

A visit to YouTube or the Skoog website shows the huge range of the Skoog, with a large number of videos showing the versatility of the instrument. The Skoog is also highly durable, the soft nature of the instrument means that it can survive even the toughest classroom.

Schools have used the Skoog not only in music lessons but also for literacy and other areas of the curriculum. The Skoog can be used to create sensory stories and add atmosphere to activities.

The Skoog stand is well worth a visit to get hands-on experience of this wonderfully innovative tool.

Stand: B129

StoryPhones

StoryPhones will be showing off the new improved version of its MP3 headsets and players. The incredibly rugged headsets were developed to engage students in listening to different MP3s individually and as a group.

Where the system excels is through the BookShelf that can be accessed by users. With an extensive range of different books, which contain titles from well known series such as Jolly Phonics, Walker Books and Oxford Reading Tree, there is plenty available to support literacy across many different schools.

The rugged nature of the StoryPhones means that they are particularly well suited to the special needs environment. Students with autism are able to focus on what they are listening to without the distraction of other environmental noises.

The recording feature attached to each headset enables children to record their own stories to share with others.

The docking station for sets of StoryPhones means that they are always fully charged, so eliminating the perennial problem of searching for batteries. The remote control attached to the set is also a boon to teachers who want to be able to question children at appropriate points.

StoryPhones is one of the rare products that works equally well in the mainstream as in special needs settings and is well worth a look.

Stand: G245

TextHelp

As *Ability* magazine recently reported, the cloud is less accessible than other forms of computing. This is something TextHelp is determined to try and overcome.

The company's Read&Write Web App contains a suite of tools to aid people with cloud computing. The suite contains a dictionary, picture dictionary, translator and a few other goodies alongside Read&Write for Google Docs, which enables all the tools that people are used to through the excellent Read&Write range to be accessed via the Chrome browser.

In addition the web app will read out, with varying speeds of voice different text on web pages, documents and mobiles. Opening up the world to people with challenges reading.

The addition of eBook Reader is something that adds further value to the package. This gives the ability to dual highlight and read back e-books. All the functions of Read&Write are also available through the package meaning that text can be looked up and extracted if necessary.

TextHelp is also launching Speech app and Dictionary app for iPod and iPhone, which will provide text to speech for messages and emails as well as giving a definition and image to aid understanding.

Stand: C104

Therapy Box

Therapy Box, which is quickly establishing itself as a maker of quality apps for communication with products such as Scene and Heard, is launching the latest version of Predictable, prediction software for portable devices.

Launching on both iPod and iPad as well as Android devices, the app enables people with limited mobility to communicate in a rapid and effective manner. The app learns your vocabulary and as a result it speeds up with use. A built-in phrase bank helps individualise the app and makes it easier to access the things that you use more often.

One of the key features of the program is that it can be operated with a switch as well as through using the touch screen. This makes it more accessible than many other comparative apps.

For those with more movement, handwriting recognition means that words can be written directly to the plan. Linking in with the innovative nature of the app, social media buttons are included to help people communicate in an easy manner. Predictable meets the usual high standards you would expect from Therapy Box and is well worth looking at.

Stand: B140

VisionAid Technologies

VisionAid, a company that makes scanners and CCTV magnifiers for vision impaired people, is branching out with a reading aid for students with dyslexia. Lex is a software package for people with dyslexia and learning difficulties that allows them to quickly acquire or import their documents and then convert them into a format that makes them far easier and faster to read and comprehend.

This includes colour adjustments, (colour replacement and tinting), line spacing adjustment, six viewing modes (visualisations), custom highlighting and many more. Users can also have their documents read out loud in any one of 26 languages with the latest human sounding voices.

Also on the stand will be LexCam, a camera designed to be used in conjunction with the Lex software. It is a highly portable system that gives dyslexic users near instant access to practically any physical document. The Lex software and Lexcam hardware are available to students claiming Disabled Students Allowances for £399.

Vision Aid International's Lex software and Lexcam hardware

Stand: C133

Wishtrac

Wishtrac will be launching two new products at BETT this year. In keeping with its wide product range, one is hardware and one software. Version three of the popular Booster Phonics software will be launched.

The product is specifically designed to aid children with special educational needs. It uses a multi-sensory approach to synthetic phonics. At the heart of the product is a comprehensive assessment tool that covers over 120 separate skills and can help to build up a detailed profile of strengths and weaknesses.

This forms the individualised program for the student who then takes part in daily activities designed to strengthen areas for improvement. To make life easier for the teacher an IEP module is included and this helps to measure progress over time. Booster Phonics is available on a 28 day free trial so is certainly worth a look especially as the full version is less than £60.

Wishtrac will also be launching the SEN Trackball mouse. This mouse alternative is designed for use with SEN as well as early years, although Wishtrac points out that it can also be used by people with limited mobility, for example stroke victims.

The trackball is comfortable to use regardless of hand size and the clear buttons make it easy to build up skills of left and right as well as making it easier to operate. The ambidextrous use of the Trackball mouse also makes it ideal for a classroom as no child is left out.

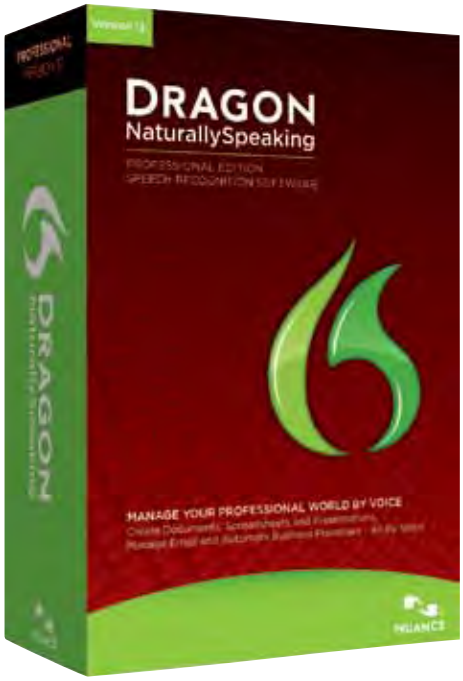
Stand: B106 ■

The Dragon Education Programme

Nuance, developer of Dragon NaturallySpeaking speech recognition software, has made significant improvements in the performance and price of its world leading technology for disabled students and staff at schools, colleges and universities, by introducing an Education Programme.

Dragon allows users to create documents, emails and even surf the web up to three times faster than typing, with 99% accuracy, all by using voice. It's available for both PC and Mac, and has helped to enhance the education process for students, teachers and administration staff.

Dragon NaturallySpeaking Professional 12 is available in affordable Disabled Students Allowances (DSA) and Access to Work editions.



Delivering up to a 20% improvement in out-of-box accuracy compared to Dragon 11, Dragon 12 enables students to get things done faster than ever, boosting performance by delivering easier correction and editing options and giving users more control over their command preferences.

Users can dictate into a digital voice recorder or a compatible iOS/Android smart phone device. Dragon will then automatically transcribe the audio files into text.

This autumn, Nuance also launched a new version of Dragon Dictate for Mac. Version 3 of the software for Apple systems has improved accuracy, providing faster, more advanced correction and now includes an Express Editor that allows users to dictate into a text field that does not have full text control.

Dragon is a proven accessibility tool for students with physical disabilities as dyslexia and other learning difficulties. It helps them gain greater independence and empowers them to keep pace with their peers.

Students can deliver longer, more thorough and detailed essays and other written work since they can focus on quality content, rather than the traditional writing process.

Dragon includes text-to-speech technology that lets students listen to text read aloud by a computerised voice and follow what is being read on the screen.

This practice has been shown to improve both word recognition and pronunciation for struggling readers and students learning English, allowing for easy proof-reading.

The 'play that back' feature lets students hear their dictated text in their own voices, allowing them to self assess their writing and make any necessary edits.

Dragon can:

- Improve core reading and writing skills for students of all abilities, especially those with dyslexia.
- Help students with language-based learning disabilities to more easily express themselves.
- Provide an accessibility solution for teachers and students with physical disabilities.
- Help bridge oral and written communication skills for English language learners.
- Enable teachers and staff to prepare lesson plans and assignments, assess student work, write reports and send and manage email faster and easier than ever before.

A new version of Dragon software has been introduced aimed at legal students who are eligible for Disabled Students Allowances (DSA) or for those who qualify for Access to Work support. The Dragon Legal DSA and Access to Work Edition features a special language model – created from thousands of legal documents to include acronyms and other specific legal terminology – this helps users achieve optimal recognition accuracy when dictating legal terminology.

Nuance offers educators the opportunity to take advantage of the advanced features and network deployment benefits of its top-of-the range Dragon NaturallySpeaking Professional software with an education volume licence programme that is specially designed to suit the requirements of staff and students in every qualifying organisation, university, college or school.

For example, schools within the key stage range 1 to 4 (inclusive) can acquire the 'Classroom Pack', which allows for up to five individual school-owned machine installations with an unlimited pupil/student/staff user profile capacity at £495, equating to a saving of £1,500 over the equivalent single boxed copies.

Similarly, the 'School Licence' can be installed on an unlimited number of site-wide institution machines with an unlimited number of academic users at £899, which can equate to a saving well in excess of £20,000! ■

Log onto learning

elearning is often regarded as lacking the human touch but some training providers are convinced it is a more effective way of helping people with dyslexia get to grips with assistive technology

Training is vital if users are to get the most out of assistive technology, particularly if they are dyslexic.

Yet all too often training is an afterthought. Among students who receive software under the Disabled Students Allowances, as few as 25% complete the courses designed to help them get the most out of their assistive technology.

Some 64% appear at their first training session, according to a recent study by EA Draffan of Southampton University. By the time the second session comes round only a half of those who attended initially are still with the programme.

Excuses for not coming included that students believed they could teach themselves, were being given the wrong sort of training or that friends would give them a hand in picking up how to use the software.

But Chris Quickfall, founder of eQuality Learning, is convinced that remote learning can provide an alternative to face-to face instruction that suits some dyslexic students much better.

With the help of the Centre for Design and Research at the University of Northumbria, he has invested over £100,000 in developing a remote training facility.

His training website not only allows trainers to conduct one-to-one sessions with students, but enables them to record clips from the sessions to look at later. eQuality Learning has also created a library of pre-recorded instructional videos covering commonly used software.

"Early on we discovered we shouldn't just tell users what button to press. We needed to build their confidence and to increase the probability of their retaining training information," says Quickfall.

eQuality Learning has tried to make it easy for a student to attend their first session. Students can take a quiz to work out what kind of a learner they are, so that their course can be adjusted to suit them.

The company has developed an online dashboard that provides information about a student's account with the service, a CV of the trainer who has been assigned to the student and records of bookings and links to resources.

Students are provided with a training diary with booking details and session reminders. "It is very important to have a rapport between student and trainer," says Lee Chambers, eQuality Learning's training services manager. "When we started a lot of trainers pointed out you would lose the body language," Quickfall admits. "But is depends on how IT literate people are. The younger students preferred remote training, the older ones wanted face-to-face.

"When we are training people on Dragon NaturallySpeaking there are a million and one reasons why people don't want us to sit next to them. But they are often quite happy to read out their work remotely.

"You have to have top quality trainers and make sure they are well trained so they make the right decisions for trainees."

eQuality Learning's feedback seems to justify Quickfall's commitment to remote learning. Not only do 95% of students attend their first session, but 94% of them say it has boosted their confidence. Over 90% come back for other sessions and in all 80% complete their courses.

Nancy Doyle of consultancy Genius Within, which runs a network of 28 coaches who work with dyslexic employees face-to-face or over Skype, is also convinced that online training is a powerful medium.

Genius Within's website delivers courses and gives subscribers access to online forums where they can talk to qualified psychologists. The site also has instant crib sheets that answer common questions people have with grammar.

"One of the issues with face-to-face is that people forget what they have learned," she says. "With our online coaching modules, people watch videos that take them through an interactive process of reflection."

Genius Within has created a series of 30-45 minute video courses that allow clients to overcome difficulties with memory, organisation and time management in the workplace. They can also tap into the positive aspects of dyslexia in a course called Genius Within.

Surprisingly, Doyle says that literacy is not the biggest issue for people with dyslexia. Over 90% want help with memory: remembering what has been said in meetings and verbal instructions. A further 87% need assistance with organisation, but only 67% have issues with literacy. ■

For further information visit http://bit.ly/T27sqr or http://bit.ly/WiInby

Hitting the right note

Technology is giving disabled people access to music making like never before

Playing and listening to music is an important part of the enjoyment of life, but disabled people have struggled to take part in musical activities.

Now advances in technology are opening up music making to a greater number of people than ever before through novel musical instruments, inclusive music notation and accessible digital recording equipment.

Many disabled people rely on technology to compose, perform and learn about music – from blind people using Braille scores, to physically disabled people using assistive technology to control computers.

"Assistive technology can range from the low tech, such as joysticks or switches instead of a mouse, to hi-tech motion sensors that can harness any physical gesture," explains Doug Bott, a programme manager at accessible music organisation Drake Music.

Recent developments in electroencephalography have even enabled Mick Grierson of Goldsmiths College, University of London to play musical notes just by thinking about them.

"With the right support and the right teaching there is pretty much no limit to what you can do," says Tim Burgess, founder of Raised Bar, a music technology training and development company.

"A blind student recently completed a Masters degree at the Birmingham Conservatoire. You have got to be determined to do it, but that is true of anyone doing a Masters."

Music is more accessible now, agrees Tim Swingler, project director of musical instrument company Soundbeam.

"In therapy, the client may have a drum but they may not be contributing to the music, because they have assistance to hit the drum. With assistive technology they have a choice whether to hit it or not."

The quality and choice of adaptations is likely to get a boost next year with the launch of a competition to design one-handed instruments that can emulate any of those used in a classical orchestra.

The One Handed Musical Instrument (OHMI) Trust is offering two awards: one for a concept instrument capable of development, for which the winner will be awarded research and development funds, and the other for playable instruments which will be awarded an OHMI-Ars Electronica Prize.

"It is driven by the fact that hundreds of thousands of people with disabilities in the UK, and millions across the world, are excluded from music making because musical instruments all require two highly functioning hands and arms to play to any standard," says the Trust.

OHMI is planning that the winning instrument(s) will give public performances in Linz with the Bruckner Orchestra and in Britain with a UK orchestra yet to be decided. The organisers hope that the UK performance will be broadcast nationally.

The OHMI project involves a collaboration between the City of Birmingham Symphony Orchestra, Ars Electronica, Drake Music, and HemiHelp.

Further information on the rules of the competition and how to enter can be found on http://bit.ly/Ws5BzM.

Over the following pages we look at some of the key developments in assistive music and the organisations behind them.

Magic Flute

Some innovators have come up with new technology-based instruments. For example, the Magic Flute is for people who wish to play traditional musical instruments but have no hand or arm mobility.

It was co-developed by Ruud van der Wel, the founder of the My Breath My Music Foundation in Rotterdam.

The Magic Flute consists of two separate parts, a flute and a control device with a display. It is fixed to a tripod and blown through a short, narrow pipe. The stronger you blow the louder it sounds, while head movements up and down determine the pitch.

The musician can select different instruments sounds or access the user settings without the help of another person by using 'sip & puff' control functions.

As a teaching aid, the display also shows which notes the musician is playing. The Magic Flute can be connected to other electric sound sources, such as a keyboard, a synthesizer or a computer, enabling the user to generate a variety of different instrument sounds ranging from the flute, saxophone, guitar and even percussion.

"The Magic Flute hits two birds with one stone: providing lung training exercise and therapy while opening up the opportunity for

Glen plays the magic flute

the player to participate in music making," explains Ruud van der Wel.

"It has become very popular in the Netherlands, particularly since 11-year-old Glenn won the national television Cappies Award in 2011 playing the instrument."

Soundbeam

The exotic sounds that can be produced from merely waving at the award-winning Soundbeam raise a smile wherever it is played.

The electronic instrument is a MIDI controller that can be connected to up to four ultrasonic beams and switches to turn movement into sound.

Documentary composer Edward Williams, who wrote the scores for David Attenborough's *Life on Earth* TV series and many other natural history programmes, had the idea for Soundbeam, which he originally saw being used in contemporary dance.

The first model appeared in the mid-1980s and was produced by the British synthesiser manufacturer EMS, who created the synthesiser used in Pink Floyd's iconic Dark Side of the Moon album.

The latest version – Soundbeam 5 – has an integrated sound chip that removes the need to connect to an external MIDI instrument. It is called Soundbeam 5 because it has five functions: synthesiser, sampler, amplifier, drum machine and soundbeam.

Individual notes, chords or sounds can be assigned to each beam. The range of the beams, how they react to movement, how many notes or chords they make available and their pitch can all be programmed by the user.

"Soundbeam is quite different to the kind of technology involved in sensory rooms because it demands a certain amount of imagination," explains Tim Swingler, Soundbeam's project director. "It is not a gadget you just turn on and for that reason it does have challenges in training people how to use it.

"We encourage teachers to think of it as a though it was any other kind of musical instrument. You need to think 'what do I need to do to help a child get the best out of it'."

It comes with two libraries: one containing musical instruments, the other recorded samples of sound – geese, spectators at a football match, a tractor and so on.

"It is very programmable. We recently put together a set of sounds for bonfire night. We have tried to square the circle with all the things people wanted to do with it and still keep it simple," says Swingler.

Unlike some other software-based educational applications which involve individual students interacting primarily with a computer, Soundbeam encourages collaborative group activity.

"It is perfect for classroom-based projects designed to encourage learners to gain an understanding of the essential building blocks of music and to assemble these into something creative and original," says the company's website.

To mark 25 years of making music with Soundbeam, the company is inviting its 4,000 users to submit video examples of their Soundbeam work to YouTube, with cash prizes for the best entries.

The judging panel includes Led Zeppelin bassist John Paul Jones, conductor Charles Hazlewood, and Edward Williams himself. Submissions – closing date is Friday April 12 2013 – should be of new and original Soundbeam work in any style or genre uploaded as films on YouTube of at least two minutes duration. Audio only recordings are not acceptable.

Prima Vista Braille Music Services

Up until now, blind musicians have had to rely on charities and other organisations to produce transcriptions of the works they needed to access. This was often a lengthy process with no guaranteed delivery date.

However, Lydia Machell, of Prima Vista Braille Music Services, has developed innovative software, launched in 2011, that makes it possible to mass-produce Braille music for the first time.

The software works directly with publishers' digital scores, files which are produced as part of the print production process. The system earned a US patent in 2011, with a European patent pending.

Prima Vista has made Braille music more readily available

Music publishers allow Prima Vista

access to copyright material in return for a small royalty on sales.

There are currently nine major publishers working in partnership with Prima Vista, with others preparing to join the scheme. Prima Vista is a member of both the Music Publishers Association and the UK Association for Accessible Formats.

Existing Braille music libraries tend to concentrate on classical music. Prima Vista is creating a diverse catalogue of works ranging from pop and jazz to piano methods, exam pieces and full-scale choral works. Prima Vista's customers include music students and teachers across Europe, North America and Asia.

Prima Vista sells its Braille editions from its website where customers may opt for downloadable scores or embossed scores delivered by post.

Dancing Dots

The American company Dancing Dots has also developed technology to make it easier for sighted musicians to produce Braille scores.

Founder Bill McCann developed Goodfeel, software that enables musicians to prepare a Braille score without needing to be a Braille music specialist.

Users can scan a score or import MusicXML files from Finale, Sibelius and other notation programs. Then use a program called Lime to edit the score with a PC or MIDI musical keyboard before outputting it as Braille.

Raised Bar

Tim Burgess was a semi-pro keyboard player until he lost his sight in his early twenties. He retrained as a programmer, but seven years ago returned to music, helping musicians to access notation and audio technology and setting up a company called Raised Bar.

He points out that sound recording has become less accessible since the introduction of digital technology. In the days of tape and scissors it was easier for a visually impaired person to edit recordings.

"Accessibility to music is the same as a car in 1908. You have to be pretty dedicated to take it on. But this should be a natural hobby for many more visually impaired people," he told *Ability*.

Last year he began an ambitious project to build an accessible mixing desk that replaces the knobs, sliders and displays on a conventional device with accessible voice operated controls.

The SurfaceReader uses off-the-peg screen reading packages (Jaws, Window-Eyes, Dolphin Supernova, System Access and NVDA) to make MIDI-based control surfaces talk.

It is designed to run in the background, intercepting messages going between a commercially available digital audio workstation and its control surface.

Using SurfaceReader hardware controls announce their names and provide feedback such as which function a control is set to.

The project was developed from Burgess's earlier Mackie Display Reader application. A complete rewrite of the original concept was made possible by a donation from the Elizabeth Eagle Bott Memorial Fund, administered by the Royal National Institute of Blind People.

"We pretty much have SurfaceReader doing what we want it to do. At the moment we are providing protocol rules for five devices with two more to follow," says Burgess. "We just need a bit more work on documentation to help users develop their own configurations and to share them."

If you are an electronic musical instrument manufacturer or an audio-based software house, there are very good reasons why you need to be talking to us, Burgess continues.

For each item of equipment you produce which is made accessible, you are presented with a direct sales opportunity. For every piece of midi equipment you make accessible, you are gifted a loyal customer."

Full Pitcher Music Resources

Audrey Podmore of Full Pitcher Music Resources says when she used music technology to provide workshops for people with a wide range of special needs, it involved carting around a carful of hi-tech equipment.

continued on p26

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"Now, the built-in sounds are good and portable computers are powerful enough to use virtual sound libraries of the highest quality," she says.

Computer access, which for many required control boxes and lots of switches with trailing leads, can often now be achieved with one simple mouse replacement.

"These developments mean that music leaders no longer need lots of IT skills and setting up time, and more can contemplate using a computer to resource their music sessions," she adds.

Full Pitcher has developed computer grids for music making: the company's MIDIgrid software displays up to 200 boxes that can be assigned notes and chords.

The notes are selected by a mouse, trackball or joystick and played back through the host system's soundcard or an instrument that uses the midi standard.

"This year, I published GridPlay for carers and teachers," says Podmore. "This is a playback version of MIDIgrid grids (each of which is a mini-application) and an e-book on using the grids with severely disabled people, all the fruit of 35 years experience in the field."

Drake Music

Drake Music has been promoting the use of assistive music technology since 1998 through courses and programmes that bring disabled and non-disabled music students together.

Teaching is done in Bristol and the South West, Manchester and the North West, and London and the South East.

At the end of 2011 the charity launched Introduction to Music, an accessible music course devised in association with the Open College Network South West Region.

The course combines practical performing and composing activities with learning and assessment resources for Clicker 5 software, which is physically accessible to almost any student.

Bradley Warwick, the first student to take the course, uses two switches to control the Clicker 5 software on his computer. He has been able to learn about key musical concepts, watch films and listen to audio clips. He also completed a range of assessment tasks using Clicker, without adult intervention.

Products developed by Drake Music include E-scape, PC-based music composition software using switches and scanning, and the MidiCreator switch and ultrasonic beam MIDI controller.

"Although we're a small organisation we have big ambitions, and we see the next couple of years building on the work we have undertaken and increasing our reach," says Carien Meijer, chief executive of Drake Music.

"Technology is providing opportunities for us to find new ways to both make music and collaborate and increasingly to share resources."

The Quintet

Click2Go's the Quintet is a music machine that can be operated by any type of switch. The device is designed to be used by teachers, therapists, parents and others who want to use music in an activity with children or adults.

It can be played by up to five people. Each player can step through the notes of a song, tap a tempo, play the chords of a melody or trigger complete passages of songs.

There are 128 different instruments to choose from,

with each user playing a different one at the same time. There are accompanying memory cards with 10 songs on each. The card is plugged into the back of the machine to transfer the songs across.

A 10 position rotary switch on the Quintet's front panel enables users to choose which song they want to play.

Because a user does not need to be an expert in music to operate the Quintet, says Click2Go, it can be used in many situations including classroom activities, music therapy workshops, occupational therapy sessions and much more.

Links for further information

Click2Go – www.click2go.ie
Dancing Dots – www.dancingdots.com
Drake Music – www.drakemusic.org/
Full Pitcher Music Resources – www.fullpitcher.co.uk/software
Magic Flute – www.mybreathmymusic.com
Midi Grid – www.midigrid.com
Prima Vista Braille Music Services – http://primavistamusic.com/
Raised Bar – www.raisedbar.net
Skoog – www.skoogmusic.com
Soundbeam – www.soundbeam.co.uk
The One Handed Musical Instrument (OHMI) Trust – www.ohmi.org.uk ■

Why the Skoog is no square

The distinctive Skoog cube is delighting players of all capabilities. Here is the story of how the instrument came about

In late 2006, a team of researchers from the University of Edinburgh teamed up with a group of education specialists called The Tapestry Partnership.

"Their goal was to change the fact that there was no musical instrument designed specifically for children with physical and learning disabilities," says David Skulina, chief executive of Skoogmusic.

The partnership wanted to produce an instrument that would meet the needs of children with a broad range of disabilities and that would allow them to learn and progress as musicians on an equal footing with fully able children.

By 2008, the first prototype musical instrument was ready and the two lead researchers, David Skulina and Ben Schögler, began working extensively with teachers and pupils in special schools across Scotland to hone and develop their ideas. The prototype was the first version of what would become the Skoog.

The Skoog is a new musical instrument that uses cutting-edge technology to give the control, nuance and expressivity of traditional musical instruments to those who, for one reason or another, cannot pick up and play such an instrument.

"The Skoog can give children the same control over sound as a violinist has over a violin, or a flautist over a flute," said Nigel Osborne, the British composer.

In 2009, Skulina and Schögler formed Skoogmusic, a spin-out company of the University of Edinburgh, and the Skoog was officially launched to the education community at BETT 2010, the tradeshow for education technology.

The Skoog is now widely used in special needs classrooms across the UK and around the world. This year it made the transition from the classroom to the stage, with a Skoog soloist with cerebral palsy featuring alongside a mainstream ensemble as part of the London 2012 Cultural Olympiad.

But what exactly is a Skoog? Roughly hand-sized, the Skoog is a soft, spongy cube that plugs into a computer or laptop's USB port. By touching, pressing, squashing, twisting or tapping the Skoog's five colour-coded sides, users can play a wide range of instruments.

Dynamic sensors within the Skoog respond to the user's movements, and the software converts these movements into sound via attached loudspeakers or headphones. The Skoog uses physical modelling synthesis to mimic the behaviour of real musical instruments and this creates a direct correlation between the gestures a player makes while interacting with the Skoog and the sound that is produced.

Skoog scores at Drake Music Scotland's Technophonia

It is "one of the most exciting technological developments for disabled children and adults of any age, for some time," says Petrina Lodge, head of education at Meldreth Manor School.

The software is extremely simple to use, which makes it ideal for use in the classroom, as teachers need no specialist knowledge. There are currently around 20 physical modelling instruments and it even has a built-in sampler so users can record their own sounds.

This opens up the opportunity for using the product in other areas such as literacy and numeracy, or speech and language therapy, and it comes with a number of pre-recorded samples (singing, animal noises and so on).

The Skoog can also be used as a MIDI controller to interface with other programs and devices such as synthesizers, samplers and sequencers.

Because the surfaces on the Skoog are colour-coded, music can be written out in the form of graphical 'skores' using coloured blocks to show the user which button to press and for how long. There is a raft of support material, resources and tutorial videos available from the Skoogmusic website.

One of the latest features of the Skoog software is music-box mode. Instead of assigning different notes to different faces of the Skoog, a sequence of notes is pre-determined so that each time a player touches the Skoog the next note in the sequence sounds.

Designed for people with limited movement, the player still controls how and when each note is played and retains full control of expression, tempo and articulation.

"From musicians who want to experiment, to disabled children who may struggle to play any instrument, the Skoog creates a level playing field for interaction and integration with players of all capabilities," says Skulina. ■

www.skoogmusic.com.

Possum moves into telecare

Electronic assistive technology company Possum is updating its traditional environmental controls with internet access and telecare functionality

At Dame Hannah Rogers Trust, Devon, a centre which cares for 44 young people with complex physical disabilities, the most popular piece of equipment is a Possum Freeway environmental controller.

The device is one of a number installed in Dame Hannah's environmental controls room. The room, which was set up last year, is equipped with TV, lights, radio, iPod and a ceiling fan.

All these appliances are operated by remote control units and switches to enable people with severe disabilities to carry out everyday tasks.

Staff have set up the Freeway to run 16 tasks ranging from very basic ones such as turning on a disco ball or radio to more complex sequences of commands.

"For example, you might choose to turn on the TV, select a channel and adjust the volume. At the same time, you might decide to close the window and blind and adjust the room temperature." says occupational therapist Nellie Dradge.

Some residents prefer Possum's Primo controller, which can be operated by switch or a touch screen.

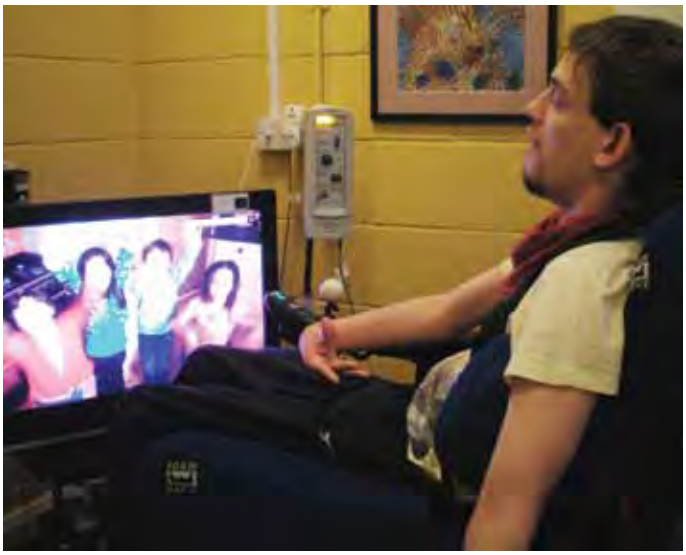
"The Primo is good for users with higher cognitive functioning; it allows the user to move between different menus and complete more complex tasks such as choosing a programme from the TV guide on Freeview or Sky," explains Dradge.

Possum, from the Latin word for 'I can', was founded by an engineer called Reg Maling who, while volunteering at the National Spinal Injuries Centre at Stoke Mandeville Hospital, encountered a young man who had been injured in a water-skiing accident.

The firm – the UK's first electronic assistive technology company – is still going strong more than 50 years after it developed the Patient Operator Selector Mechanism (POSM) to give paralysed patients control over devices such as bells, lights, telephones and televisions, even IBM electric typewriters.

Around 5,000 people now rely on Possum products. "We give control and independence to disabled and elderly people who may be totally dependent on others to do everyday tasks. Tasks you or I take for granted," explains Possum's managing director Philip Robinson.

The company is certainly not standing still. In the wake of the Government's 3million lives campaign to promote telecare, Possum has developed a series of products aimed at assisting in the care of elderly and disabled people.



A resident at Dame Hannah Rogers Trust uses a Possum controller to watch TV

For example, the company has introduced the Info Pager, an intelligent pager that allows people to send a number of pre-written messages to carers. It can also be linked to a range of sensors including smoke, flood and fall detectors.

Falls are a distressing part of growing old and a drain on scarce medical resources: it can cost as much as £6,000 to treat someone who takes a tumble. So, finding ways of preventing accidents like this has a big pay-off.

Possum systems can be linked to bed exit sensors that use a PaperThin sensor to detect a persons dielectric signals (not weight) to alert carers to the fact someone has got up and could potentially fall. The detectors can also turn on bedside lights automatically to further cut the risk of an accident.

"We are strong in environmental control, receiving a Queen's Award for Enterprise in the Innovation category in 2009, and are now developing into telecare, selling integrated solutions at lower prices," explains Robinson.

"In the New Year we will be introducing the Qwayo, a device which gives switch access to Android devices and apps and provides environmental control features using wireless infrared and radio communications.

"While the Qwayo is a conventional environmental controller, it also offers access to the internet via a tablet device. Now a user can add social inclusion to physical inclusion," says Robinson. ■

Touch and go

Ability reviewer Allana Grant catches up with the latest tablet apps, including a free game from the CBeebies TV show

In the two years since Apple's Steve Jobs launched the iPad, we have seen a whole host of devices that allow consumers to manage email, web browsing, social networking, and media consumption on the move.

But over the past year there has been a significant increase in the numbers of apps to support learners with additional needs.

Last month saw the CBeebies website launch a free tablet and mobile app called Tumble Tapp Snap, designed specifically for the use of children with learning, developmental or motor function disabilities.

Tumble Tapp Snap is based on Mr Tumble, a regular character in the CBeebies programme Something Special, which was created for children with special educational needs (SEN). The game centers on teaching children how to manage simple yet important tasks that are part of their daily lives.

A variety of activities, such as helping Lord Tumble get dressed, are designed to encourage a greater degree of independence and increase awareness of a child's environment.

The minimalist design makes for fewer distractions, providing a simple, attractive game that encourages players to identify frequently occurring words and try matching identical as well as non-identical objects. The aim is to hit the button when you spot a match.

"While bright, noisy computer programs can provide great stimulation for children with SEN, for some children a mouse may require too much motor skill, and switch devices may be too indirect," blogged Catherine of the CBeebies team recently.

"The introduction of touch monitors has helped enable more users with SEN to interact with technology, but until recently these were not readily portable, available or affordable.

"By choosing to build the game in the new coding language called HTML5, we're able to make the game freely available on mobile devices via the CBeebies site, without players having to download or buy anything."

Another impressive group of apps is the HelpKidzLearn software for the iPad. HelpKidzLearn was created by Inclusive Technology. It is a collection of software that has been developed for young children and those with SEN to play on line.

A great example of one of HelpKidzLearn's games is Hurdle Champion £1.99 from the App Store. This particular game is geared toward children with motor function disabilities who choose a character and race against the computer.

Players are shown a visual clue which indicates that it is time to help your runner jump the hurdles by pressing a switch or touching the screen. Hurdle Champion has minimalist, attractive graphics which allow players to develop switch and timing skills.

Another praiseworthy app is Expressive, £17.99 on the App Store. This app was developed by a speech and language pathologist, and is compatible with the iPhone, iPod touch & iPad.

Expressive allows children and adults with autism and other disabilities to communicate more effectively through pictures. As the user touches one of the 450 categorized images; a corresponding audio clip plays.

Users may also add their own pictures and voice recordings as well as creating new folders.

AppWriter English by LingApps ApS, is available on the App Store for £20.99. One of the most successful text editors for the iPad, it opens up a whole new range of possibilities for users of all ages with reading and writing disabilities as well as those with a visual impairment.

AppWriter is chock full of assistive features and the app integrates fully with the iPad's iOS. The text-to-speech feature lets users read documents in any format. Users can choose a reading strategy, such as reading sentence by sentence or reading words as they type them. All menus and buttons are also accessible. Additionally, visual tools highlight the text as it is read.

AppWriter's word prediction feature helps users develop their writing skills by providing the tools to build phrases and sentences with ease.

Context based word suggestions should allow users to produce quality work whilst reducing the time it takes to do so. AppWriter predicts the word you are going to use next so grammatical or spelling errors are less frequent.

The Dyslexie font is another great feature. Its characteristics make it easier for people with dyslexia to distinguish the individual letters. This reduces the number of reading errors as well as the effort it takes to read the text. ■

Getting the job done

Digital design guru Sandi Wassmer argues that completing a task online is more important than whether the software you use to do it complies with accessibility standards

Approaches to digital inclusion for older and disabled people have been primarily concerned with connecting them to the internet. Those advocating for the rights of access to the internet for older and disabled people focus on the enforcement of anti-discrimination legislation and ensuring that technology conforms to certain technical standards.

However, there is just no point connecting folk to something they can't use or conforming to standards of accessibility when these standards have not been thoroughly user tested. We have become attached to the idea that the solution is to make all ICT accessible to all older and disabled people, but this is neither reasonable nor desirable.

Older people will soon be the largest group of internet users

Although technically possible, it is not financially viable. The costs by far outweigh the commercial benefits, which is why accessibility in mainstream technology organisations is not an integral part of business operations. It will remain a matter of corporate social responsibility as long as the blanket approach to accessibility is applied.

Fortunately, a far more realistic and sustainable means for older and disabled people to have enjoyable digital experiences is emerging. What matters most is to have tools that are fit for purpose; the way of determining this is not by focusing on how technology works, but by concentrating on how people adopt and use it.

I am not suggesting that accessibility isn't important, but it must be viewed as a subset of usability and usability is concerned with one thing – task completion. If people cannot complete the tasks that are expected of them when using technology, then accessibility is moot.

This is where choice comes in; people make technology choices all day long and these choices begin with need. The first question is "What task needs to be completed?".

The technology decision will thus be influenced by circumstance, environment, ability and personal preference. I use Pages on my iPad to write, but Word on my Mac to format documents. If I'm going out, I always check the weather, which may be on the BBC website if at my desk or on the Met Office app on my iPad if I'm not.

My husband prefers the Weather HD app because he is a visual thinker and always uses his iPhone. He only uses his iPad for reading and surfing, but I'm the opposite because I need the real estate.

He loves augmented reality apps for navigation, and I leave this task up to him, as there are no tools as yet that do as good a job for us blind folk and that's OK by me. It's only a matter of time.

What the advent of mobile apps has shown us is that people choose the apps that allow them to complete tasks in a way that suits them; if you take 10 people's smartphones you will find 10 very different sets of tools.

What's really exciting is how this approach has opened up possibilities, evinced by the crossover between mainstream and assistive technology. Dictation software is mainstream, but I certainly couldn't live without it. Eye-tracking technology, initially developed for disabled people, is now being integrated into smart TVs.

If older and disabled people have a fighting chance of being digitally included, we must accept that we are all different and we all want choice, and that making everything accessible to everyone actually poses obstacles to inclusion. For technology to be fit for purpose for older and disabled people we need to change our thinking.

The internet's potential can only be realised if we take a user centred approach and give those users choice. Policy that stimulates technical innovation that allows older and disabled people to complete tasks as intended for their non-disabled peers will redress the balance and the economy should adjust accordingly over time.

Digital inclusion will only be achieved if technology is efficient, sustainable, progressive and fit for purpose. ■

Sandi Wassmer is chief executive of digital technology company NoBlah. www.noblah.co.uk

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An end to print impairment

e-books are transforming access to print but Alistair McNaught asks how educational institutions can get away offering so few alternative formats to learners

Assistive technology is best when it is built into mainstream products. That is why e-books are potentially so exciting.

For the hundreds of thousands of print impaired people in our education systems, digital text should offer the opportunity to adapt font sizes, types, colours and contrasts, line spacing and even integrate with text-to-speech.

There are already high quality voices freely available to millions of learners in the UK and their learning providers – TechDis Jess and Jack in England, Heather and Stewart in Scotland and, in Wales, Geraint and Gwyneth.

For a well-informed learning provider working with a well-informed publisher to support a well-informed learner, the barrier of print impairment should be a thing of the past.

Unfortunately that trio of 'well-informed' partners rarely comes together. Individual elements exist but not in sufficient numbers to form a critical mass.

Learning providers too rarely make accessibility part of their procurement policy for e-book collections. They too rarely promote the accessibility benefits of e-books to all learners: e-books are too often a 'library thing', not a disability support thing.

Publishers too rarely test e-book systems with disabled users. The accessibility that exists in their systems is too rarely advertised. Then there are the excellent proactive publishers with real accessibility awareness whose products are distributed by aggregators who deliver them through inaccessible interfaces.

Learners themselves are too rarely aware of their entitlements. Research by JISC TechDis shows a yawning gap in the provision of alternative formats for dyslexic learners, despite the fact that many academic publishers have efficient and responsive systems for providing textbooks in alternative formats and the Publisher Lookup website (www.publisherlookup.org.uk) makes requests straightforward.

With free text-to-speech tools and free high quality voices available it is astonishing that learners (or indeed their parents and carers) are not demanding text-to-speech on every workstation in every learning provider.

Even tutors and academics have a significant role to play. Some mainstream publishers provide digital textbooks with high accessibility as part of their mainstream e-book offering and/or as part of a request service. Others don't.

If tutors required books on reading lists to be available from publishers in an accessible version for disabled students, then those who don't yet 'get' equality of access as a core customer value would have to improve very quickly, or go out of business.

Accessibility is a journey, not a destination, and every new technology offers potential barriers as well as benefits but e-books really are at the threshold of transforming access to print.

By adopting EPUB 3 as a standard, the publishing community has taken great strides towards intrinsically accessible formats. Positive, proactive partnerships have been built between the publishing community and the Right to Read Alliance.

The National Occupational Standards for publishing now include dozens of references to accessibility. The frameworks are in place but increasingly the place where we need to build improved awareness and responsiveness is shifting from publishers to learning providers themselves.

For example, how do colleges and universities get away with offering so few alternative formats to so many dyslexic learners? How is it that dyslexic learners in schools, with the exception of Load2Learn subscribers, are so rarely offered textbooks in alternative formats?

e-books have the potential to save real money for learning providers, to allow print impaired learners to access the same books at the same time as their peers and to integrate with text to speech and other tools.

There are encouraging signs but e-book accessibility is not yet a thing of uniform grace and beauty. If we want accessibility to be more than an ugly duckling there is a responsibility on all involved – from the learner to the library to the publisher – to communicate. ■

Alistair McNaught is a senior advisor to the JISC TechDis Service. He will be speaking at a conference called E-books and Accessibility: Ugly Duckling or Adolescent Swan? *The JISC TechDis event is on February 13 at Chancellor's Hall, Senate House, London.*

Go to http://bit.ly/SVDCUK for further information.

Caught on camera

Concern about suspected abuse of disabled people has led some people to resort to covert surveillance. Telecare expert Steve Bonner looks at the technology that can be used to detect abusers

Reports of abuse of vulnerable, disabled people while they are in the care of others are on the increase.

More than 96,000 abuse cases were reported in England last year, according to the NHS Information Centre. Of these alleged cases, 25% of the abusers were family members and more than 30% involved a care worker.

Some 40% of the reported abuses occurred in someone's own home, with approximately 30% occurring in a care establishment.

Of the 75,000 reports of abuse that were investigated by the authorities, 32% were substantiated and a further 9% were partially substantiated, representing 30,000 incidents with a strong case to answer.

Increasing demands on the care system and the pressure on local authorities to reduce overall spending means that formal carers are one of the lowest paid members of the UK workforce.

As a result, vacancies may be filled with less than suitable candidates with poor caring skills, and very little in the way of vocational aspirations. To some it is just a job and pays no better than stacking shelves in a supermarket. It would appear that some carers choose to treat the people in their care with no greater respect than a tin of peas.

Some of the most recent cases of abuse have been shocking in the extreme. For example, in May 2011, Panorama broadcast undercover film footage of systematic abuse of residents at a learning disability assessment and treatment centre, Winterbourne View, Bristol. As a result, some 12 staff have been charged with offences relating to that abuse.

In a more recently reported case of abuse at Oakfoss House, Pontefract, West Yorkshire, the concerns of the relatives of an 89-year-old female resident led to them setting up a covert surveillance camera to determine if, as they suspected, abuse was taking place.

The footage they captured showed both physical and verbal abuse. These images were subsequently used as evidence, which lead to the prosecution of two members of the care staff.

Relatives or even other carers may have their suspicions that abuse is taking place, but perhaps feel that concerns they may raise with the authorities will go uninvestigated.

As a result, they decide to turn detective themselves: covert methods are increasingly being used to establish the facts behind suspected abuse and as a means of gathering evidence to support legal action.

Recent advances in technology in terms of miniaturisation and the use of mobile telephone and satellite tracking have made devices affordable and readily available to the mass market. The sorts of products even 10 years ago James Bond would have only been able to dream about!

What can carers, relatives or recipients of care do to record and document suspected abuse, or indeed to protect themselves from accusations of abuse?

Here are some of the devices that can be used to detect abuse. This article deals with the different types of technology for covert surveillance and the practical aspects of using them, rather than discussing the undoubted ethical issues involved.

Digital voice recorders

Small, portable and with enough memory to record many hours of sound, digital voice recorders cost under £100 and can easily be hidden without having to look like a bowl of fruit or an Old Master painting. They are readily available through high street retail outlets and are very simple to use.

But is it sufficient to simply record the sounds of an event, or is it necessary to record images as well?

Without doubt a combination of both sound and video provides the strongest evidence, but capturing an incident of abuse on video may not always work. The actual abuse may be out of shot of the covert camera, or the camera may not pick up images if there is little or no light in the room.

A covert device which is battery powered or uses memory cards to record sound and images will need regular attention, possibly even daily.

Some covert devices take still images (photographs) which can help extend the useful working life of both the batteries and the memory card, but may miss that vital incident.

Wireless radio

Some surveillance equipment uses radio signals to transmit sound and images. For this, you need to be

ideally in the same house or building, certainly no more than 100 metres away.

Memory card recording

Many surveillance devices use internal memory to record their data. They are usually of the SD card type found in many mobile telephones and digital cameras. Depending on what is being recorded and how big the memory of the card is, they may need to be changed every day, although some may last a week or more.

3G devices

These covert devices are the most sophisticated and usually the most expensive. They use the mobile telephone network to relay sound and images either to another mobile telephone live or the information can be stored in memory in the device so an investigator can download the data using the mobile (3G) network.

Movement or sound activated devices

There is little point in having a recording device running when a room is unoccupied or the person in the room is asleep and alone. Many of the covert devices use sound or movement to activate them and start them recording. This means that they do not need to be attended to as often.

Hiding cameras and recorders

The list of products that can hide a recording device is staggering. It includes bedside alarm clocks, mantle clocks, wall clocks, wristwatches, dab radios, bedside radios, smoke detectors, movement sensors, wall sockets, plug-in mains adaptors, light switches, picture frames, ashtrays, clothes hooks, books, pens, sunglasses, bags, lapel badges, soft toys and even in a neck-tie.

Cameras can be hidden in everyday objects such as radios

More DIY-minded snoopers can buy simple, covert pinhole cameras at very little cost and fit them inside any object. The cameras can be obtained from high street electronics suppliers such as Maplin.

GPS and SOS devices

If it is impossible to fit a covert device without detection, one option is to provide the vulnerable person with equipment that may allow them to call for help. One example of such a product is the wrist-worn GPS SOS device.

There are many different products on the market but they all work in basically the same way. They are simplified mobile telephones, and if a wearer presses an SOS button on the unit, it will make an emergency call to a preset number and give the exact location of the person when they pressed the SOS button.

It is also possible to talk to the person who has raised the SOS call. Also, if someone is worried about the wearer but they haven't made an SOS call, it is possible to activate their GPS device and listen in to what may be happening.

CCTV identity badges

Finally, it should also be pointed out that perfectly honest, decent and committed carers may find themselves in the position of being accused of abuse of a person in their care.

For that reason, equipment is also available which allows a carer to record their activities as a means of protecting their own reputations.

The most widely used examples of this equipment are clip-on identity badges which double up as video and sound recording devices. These CCTV badges are now widely used by police forces, and NHS primary care trusts across the UK.

There is a wealth of technology out there which can help support carers and their families in the battle against abuse of relatives or those in their care. Perhaps the major hurdle is to convince the general public that this technology is a friend rather than a foe. ■

Steve Bonner is an independent assistive technology consultant. He is currently running a programme of awareness raising and training sessions in technology use, as a means of allowing people to become more independent, and remain safe within their own homes. Email: lifestylechoicesat@live.co.uk or visit the website at www.lifestylechoicesat.co.uk

Useful Links and Contacts

Out of Sight, MENCAP / Challenging Behaviour Foundation Report (August 2012) – www.mencap.org.uk
NHS Information Centre Report on Abuse (March 2012) www.ic.nhs.uk
www.maplin.co.uk
www.spygadgets4u.co.uk
www.eyetek.co.uk
www.kgbcameras.co.uk
www.lifestylechoicesat.co.uk

HD Magnifier from Optelec

Optelec has brought out the first high definition handheld video magnifier in the UK.

Unlike desktop video magnifiers, the 7-inch widescreen Compact 7 HD allows users to read letters when sitting on a sofa or favourite chair.

The magnifier has a continuous zoom from two to 24 times magnification, with a high definition auto-focus camera for better images.

Designed to move smoothly over reading materials, the Compact 7HD costs £1,095, excluding VAT.

"The Compact 7 HD integrates the largest screen available in the Optelec Compact product family; still it is small enough to be easily carried from one location to another," says the company. ■

www.optelec.co.uk

Snap&Read floats over text

Snap&Read is an accessible toolbar that reads any text on-screen as it floats over an application.

The one-button interface reads both accessible and inaccessible text aloud from Flash websites, Word documents, PDFs, web-based texts, images, and even dialog boxes.

If it looks like text, Snap&Read will read it, says distributor Inclusive Technology. Users can either install Snap&Read on their computers or load Snap&Read on a USB Flash drive and run the application directly from a drive.

Snap&Read, which was developed by Don Johnson, works identically on both Mac and Windows computers.

A single user licence is available to UK customers only for £99, an unlimited site licence excluding VAT, costs £399. ■

www.inclusive.co.uk

MV-1 could mean end of adapted cars

This year has seen the arrival of a vehicle that has been designed and produced especially for disabled people.

The launch of the Vehicle Production Group's (VPG) MV-1 signals an end to the arduous task of modifying existing vehicles to accommodate wheelchair access.

MV-1 can accommodate up to six adults, as well as the option for a wheelchair to replace the forward-facing front passenger seat next to the driver. There is also turning space for a wheelchair within the vehicle, as well as a 1,200lb entrance and exit ramp that is stored under the vehicle when not in use to allow for maximum space inside.

The MV-1 has a commercial grade driver's seat and a wide rear passenger seat. The interior also boasts a floor-to-ceiling height of almost five feet, allowing passengers to almost stand, as well as a 36 inch door. The vehicle has self-levelling suspension, and a sharp turning radius, as well as four-wheel disc brakes, and a large 4.6 litre V8 engine.

It may be a while before we see the MP-1 in the UK; however, its production in the USA is a positive step forward for the disabled vehicle industry. ■

www.vpgautos.com

Navitext lets vision impaired users read

Vision impaired readers have difficulties skimming through text quickly to get what they want to have read out to them.

Expert readers, especially of reference books and scholarly texts, learn to skip through volumes quickly to find a specific topic.

Words are recognised as shapes and for practised readers, the relevant phrase will often jump out of the page. This means they can leaf through a text quickly to find a point of interest.

A new piece of software called Navitext uses a range of text mining and text analysis techniques to identify and create document structure where none or little exists.

In addition, it provides paragraph summaries of text through the use of advanced semantic technologies and a two voice reader.

Navitext identifies key navigation points in a text to provide an easier way of moving through the text from point to point.

The software identifies key words, key facts and provides simplified words and phrases to improve the accessibility of a document.

Navitext, developed by Systems Associates with the help of a grant from the Department for Business Innovation and Skills (BIS) and the Technology Strategy Board (TSB), has three text to speech readers.

There is a two voice reader (one voice for text and the other for a précis of it), a browser-based reader and navigator, and a specialised reader for people with learning difficulties.

At press time we were unable to find out when Navitext will be available or the likely cost of the software. ■

www.navitext.org.uk

Diary of events

NADP CONFERENCE: UNREASONABLE ADJUSTMENT IN ASSESSMENT – HAVE WE GONE TOO FAR?

29 January
Menzies Strathallan, Birmingham
This conference will look at reasonable adjustment in examinations and assessments and will give disability practitioners and examination officers the opportunity to take stock of current practice, hear about current, new and innovative practice but also what challenges are currently being encountered.
Fees: The conference is fully booked at the time of writing
For further information: email info@nadp-uk.org or visit http://www.nadp-uk.org

BETT 2013

30 January – 2 February
Excel, London
BETT is one of the biggest tech shows in the UK, attracting over 600 educational suppliers and 30,000 visitors. The show moves to Docklands this year where the SEN Zone offers a wealth of information, inspiration and networking. The show also includes CPD sessions and live demonstrations of the latest in assistive technology and SEN solutions. BETT 2013 hosts free SENCO training from nasen, the UK's leading professional association embracing all special educational needs.
Fees: Free
For further information: www.bettshow.co.uk

ASSISTIVE TECHNOLOGY INDUSTRY ASSOCIATION CONFERENCE AND EXHIBITION

30 January – 2 February
Caribe Royale Convention Centre, Orlando, Florida, USA
ATIA 2013 Orlando provides an opportunity for people with disabilities, and those who support, work with, employ or educate people with disabilities, to meet annual professional development requirements, get more out of existing AT or learn about the latest technologies. The Assistive Technology Industry Association's (ATIA) conference and exhibition features more than 200 educational sessions and an exhibition hall where visitors can see assistive technology in action. Professionals, teachers, users and parents will all benefit from this conference, says ATIA.
Fees: Standard registration from January 12 is $545 for three days. Various discounts are available
For further information: Contact the ATIA office via email at info@atia.org or visit www.atia.org

E-BOOKS AND ACCESSIBILITY UGLY DUCKLING OR ADOLESCENT SWAN?

13 February
Chancellor's Hall, Senate House, London
E-books have the potential to significantly benefit the 38,000 learners in higher education with some sort of print impairment. Unfortunately, up and down the country, disability officers still scan books. With keynotes from Stephen King (RNIB; DAISY consortium) and Dr Alicia Wise (Director of Universal Access, Elsevier) and practical case study input from librarians and publishers this is a key event for anybody involved with e-books or accessibility.
Fees: £100
For further information: http://bit.ly/XUVbE8

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE (CSUN) 26TH ANNUAL INTERNATIONAL CONFERENCE

25 February to 2 March
Manchester Grand Hyatt Hotel, San Diego
The annual CSUN conference is the largest event in the world covering assistive technology. Organised by CSUN's Centre on Disabilities, the show runs over six days with the exhibition opening on February 27.
Fees: Early Bird: $455 (by January 14, 2013). Regular: $510 (after January 14, 2013). Late: $550 (after January 31, 2013 & On-Site).
For further information: http://csunconference.org or email conference@csun.edu

MIST, HAZE AND SHUTTERS: DYSCALCULIA IN HE/FE

10 April
Staurt Mason Building, Loughborough University
A one-day conference focusing on supporting dyscalculic students in further and higher education. The programme will draw on a number of case studies as well as present recent research in the field.
Fees: £140
For further information: http://dysc2013.lboro.ac.uk

SIGHT VILLAGE EDINBURGH

16 April
Grosvenor Hilton Hotel, Edinburgh

SIGHT VILLAGE GLASGOW

25 April
Marriott Hotel, Glasgow
Queen Alexandra College's well-attended series of exhibitions aimed at those with vision impairments and people who work with them takes place in two venues in Scotland.
Fees: None
For further information: email sv@qac.ac.uk or visit www.qac.ac.uk

Contacts

Ability magazine
Editorial, advertising and other enquiries:
john.lamb@abilitymagazine.org.uk
www.abilitymagazine.org.uk

AbilityNet
Charity advising disabled people, employers and others on assistive IT.
0800 269545
www.abilitynet.org.uk

GOV.UK
Government site with help on employment, training, education, financial support, transport, rights and other issues for disabled people.
www.gov.uk

Business Disability Forum
Claims to be the world's leading employers' organization focused on disability as it affects business, including recruitment and retention of disabled staff and serving disabled customers.
www.businessdisabilityforum.org.uk

Emptech
A database that provides information resources on assistive technologies, which are designed to help those with specific disabilities work and study. Emptech includes product descriptions, links to manufacturers, suppliers' addresses, as well as other related resources.
www.emptech.info

IT Can Help
Volunteers offering disabled people free local help with computers.
0800 269545
www.itcanhelp.org.uk

Leonard Cheshire
Disability care charity providing support services for people with physical disabilities and learning difficulties.
020 3242 0200
www.lcdisability.org

Shaw Trust
Charity that champions the abilities of disabled people, enabling over 60,000 people per year experiencing all types of disability to make the most of their skills, abilities and employment opportunities.
01225 716300
www.shaw-trust.org.uk

Suitability
Services to help employers fill vacancies and disabled people to get jobs. Part of charity Leonard Cheshire Disability.
0845 671 7173
www.lcdsuitability.org.uk

Remploy
Employment services for disabled people and employers, plus other business services, including IT equipment recycling.
www.remploy.co.uk

U Can Do IT
A charity that provides computer training for blind, deaf and disabled people in their own homes.
020 7730 7766
www.ucandoit.org.uk

David vs Goliath

Disability groups need to pool their resources to deal with the likes of Google and Amazon, according to Kevin Carey

I am writing this from the World Blind Union meeting in Bangkok, where the Technical Working Group that I chair has just agreed to a clearing house process among major IT accessibility investors.

No longer – or at least that is the hope – will different agencies across the world invest in the same or very similar accessible phone apps or talking book distribution systems or low cost magnification devices.

We have known since the rise of Microsoft in the early 1990s that global digital industry requires a global response. When I wanted changes in television design to accommodate blind people I visited Japanese manufacturers in Tokyo and Osaka.

But, on the whole, the disability sector in the UK has been painfully parochial. This is not because of any ingrained perversity but because the dilemma is always whether to pool your sovereignty in a disability sector across countries or across disabilities within countries but, caught in this dilemma, the usual response has been to do a bit of both.

But I think we have now reached a watershed. In spite of modest but measurable success through the World Blind Union – the disability across countries approach – I now think that pooling sovereignty across disabilities at a national level is a necessary precondition for making an impression on international companies like Google and Amazon.

No disability sector on its own, even at an international level, has the heft to change the minds of senior executives with their eyes on global markets.

Signing up to One Voice is all well and good, but this should not be an end but a beginning. One Voice needs to be given an international remit. This does not mean another layer of bureaucracy but what it does mean is that One Voice should be able to request a member organisation to take care of an issue on behalf of all its members.

Take, for example, the issue of accessible television design.

Kevin Carey is Chair of RNIB (www.rnib.org.uk), and Director of humanITy (www.humanity.org.uk)

Currently the hearing and visual impairment communities have an interest in the respective additional services of sub-titling and signing on the one hand and audio and video description on the other, but there is no reason why the two communities should make parallel trips to Japan. Surely One Voice should be able to broker an agreement whereby one organisation represents both interests.

Furthermore, until now the learning and cognitive disabilities communities have had very little leverage in the area of television and video on demand but the new digital environment makes it possible to provide additional support services to this community such as reminder story boards; and, again, this interest could be pursued by an organisation with a long record of television design lobbying.

As with all knotty problems, the issue is not technology, but trust. The reasons why lobbying organisations spend all their time behind the technological development curve are all connected with resource constraints that arise because of a lack of pooled sovereignty which, in turn, results from a lack of trust.

Somebody out there may know something that I don't know but as far as I am aware, there is not a single organisation working with people with disabilities in the United Kingdom that employs a full-time economist to combat the crude economics of the technology companies we lobby. If the major organisations pooled resources through One Voice to hire an economist we would be in a much better place.

I can already hear the disability sectoral responses: this is a big step; everything takes time; our particular concern may be marginalised by bigger issues; we will have to consult.

All these reactions amount to an inability to vest 'sovereignty' in a relationship of trust; but this surely begs the question 'What kind of real sovereignty does a small charity have in pursuing the interests of those it exists to serve?'

What use is the sovereignty of a single UK charity, even the biggest, in the face of global media companies? The contest is surely between David and Goliath and David only won once, with divine intervention. ■

Queen Alexandra College

ADMISSION FREE
Pre-registration recommended
www.qacsightvillage.org.uk

sight village 2013







unmissable for

Edinburgh
16th April
Hilton Grosvenor Street, EH12 5EF

Glasgow
17th April
Marriott Hotel Argyle Street, G3 8RR

Birmingham
16th & 17th July
New Bingley Hall, B18 5BE

Manchester
24th September
Renaissance Manchester Hotel, M3 2EQ

London
5th & 6th November
Kensington Town Hall, W8 7NX

end users employers professionals public sector

QAC Sight Village events are the UK's leading exhibitions of technology, equipment and support services for people who are blind or partially sighted.

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Sight and Sound Technology & Olympus

QAC Sight Village exhibitions are organised by Queen Alexandra College Birmingham.
A National College for People with Visual Impairment and/or Other Disabilities

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www.its4students.co.uk