

ability

Assistive technology at work

Issue 89 Spring 2013

MOBILITY SPECIAL

- Inside the exoskeletons
- Safe walking
- Cars that drive themselves
- Sport for disabled people

PLUS

- Hearing technology
- Maps for the mind
- Dell's move into AT
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The Government should set disabled people up in business rather than paying employers to take them on or providing sheltered employment, says Kevin Carey



Why advances in assistive technology are a stop/go affair, John Lamb explains

Accessibility at a snail's pace

Two steps forward and one step back' is the title of an upcoming talk on disability by Dame Anne Begg, the first MP to use a wheelchair. It is an appropriate metaphor for the progress of assistive technology.

Like the snail that makes its way up a pole at night, but drops back during the day, achieving accessibility is a slow process.

Samsung, a company that leads the tablet and smartphone makers in the Android camp, recently demonstrated just how paper thin inclusivity is in corporate thinking.

The company's effort to have Apple's VoiceOver banned because it infringed a Samsung patent was rightly thrown out by a court.

But that Samsung should have ever thought of bringing the action shows how little the needs of disabled people figure in its thinking.

Surely it must be one of the PR blunders of the year.

The incident underlines just how important it is that we maintain independent assistive technology companies that understand the needs of disabled people.

Fortunately the app revolution is throwing up plenty of innovative firms that have developed interesting products such as MiFinder, a location-based dating app, CarePair, a service that helps disabled people find carers, and AME Sight, a text to speech program.

Not only do these organisations really understand their customers' needs, but they also provide employment to a group of people who find it hard to get a start in the open jobs market.

It is good to see that some mainstream firms such as the PC company Dell are backing them as well. Dell plans to sell and support assistive technology in the UK through its own channels.

This good news has to be set against cuts in benefits that make it all the more difficult for disabled people to actually afford life enhancing technology, especially when it comes to mobility aids such as adapted cars, scooters and wheelchairs, which are now subject to tougher thresholds.

Developments such as the exoskeleton we feature on the front page are exciting, but they are beyond the reach of anyone depending on a personal independence payment.

The snail has a way to go before it reaches its goal.

Anne Begg is giving Cambridge University's annual disability lecture on April 18. Organised by the University's Disability Resource Centre, it will be held at the Fisher Building at St John's College. Email ppd@admin.cam.ac.uk to book a place. ■

Shutting up shop

Léonie Watson asks why online retailers are failing to provide an inclusive online experience

There are approximately 11 million disabled people in the UK with a total spending power of £80bn a year, according to the Department of Work and Pensions. So why are some online retailers excluding them?

Although our world has become dependent on technology, four million disabled people have never been online, while only 60 per cent of people with disabilities live in households with access to the internet.

People with disabilities or limiting long term illnesses do not receive the same online experience as other people, and it is time online retailers focused on making the digital world more accessible for everyone.

In the UK, there are a significant number of online retailers who have built respected brands and have excellent reputations but are failing to address accessibility practices and are therefore alienating a large percentage of visitors and losing potential sales.

Many people take for granted how easy it is to use the internet. They are able to look at a web page, view the content and easily navigate around a site, before homing in on the section they are interested in, by using their eyes, a mouse and a keyboard.

The internet should be a tool for everyone. Unfortunately, those who are blind, partially sighted or disabled in some other way are continually faced with an unnecessary amount of online barriers.

Web designers are expected to be up to date with web accessibility and usability guidelines and practices, especially if their job role involves creating mark up.

However, due to the recent economic turn of events, which has seen both budget cuts and redundancies, this means that updating and improving websites for digital inclusion can be even more of a challenge.

It is often moved to the bottom of the pile and, therefore, less time and effort is being spent on web accessibility.



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

Many websites don't accommodate assistive technologies, such as screen readers or speech recognition tools, very well. As a result, people with disabilities may not be able to use or enjoy the website.

A number of well-known multi-million pound online retailers have also fallen victim to the idea that their potential customers believe in the 'share everything with everyone via social media sites' myth.

By bombarding online visitors with a host of links to sites such as Facebook, Google Plus and Twitter, the retailer is presuming that the

online user wants to share a link to the site or a product.

From an accessibility point of view, this can be a barrier for some people. When someone on the autistic spectrum is scrolling down a web page, battling through an abundance of clutter and jargon can be very problematic.

If these links were located at the side of the page for example, they would still be accessible but would not act as a direct obstruction on the web page itself.

Although images work for sighted people, blind and partially sighted customers rely heavily on product or service descriptions which need to be detailed and descriptive, allowing them to gain a true indication of the product in order to make informed decisions.

By including additional information such as size, texture and colour swatches, the website is automatically catering for a more diverse customer base.

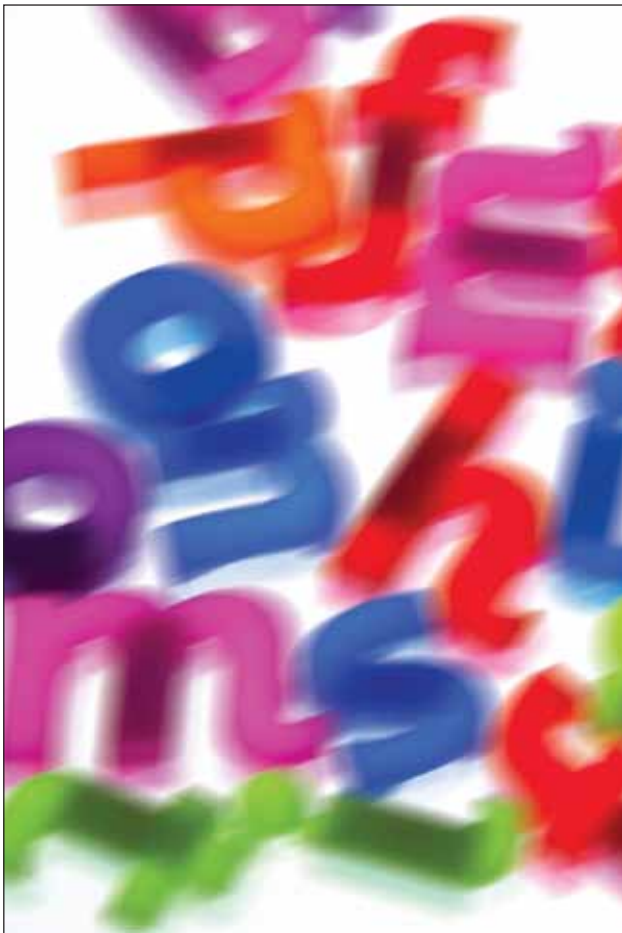
On the homepage of one retail website, the first heading is 'quantity' or 'basket summary'. Having this as the first heading on the page isn't helpful for screen reader users who rely on headings to understand the structure of content on the page.

Web pages should contain key sections underneath a level one heading that welcomes the user to the site and explains that it is the main content area.

Many retail websites contain links that say something like 'find out more', which leaves some people wondering, find out more about what?

Due to the lack of clarity, someone using screen magnification would need to explore the information around the link to find out what the link is connected to.

Online retailers must remember that making websites accessible to people of all abilities and disabilities is vital to providing an inclusive online experience. ■



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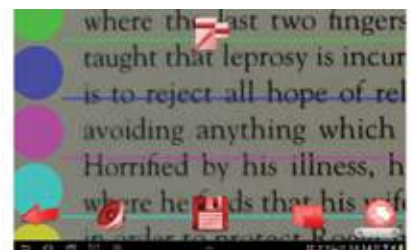
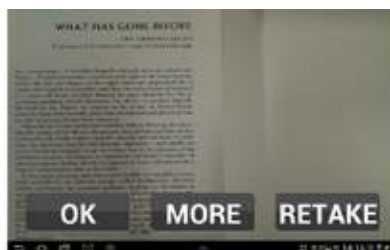
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For full specifications or details on the DM range please email georgina.pavelin@olympus.co.uk or visit www.olympus.co.uk

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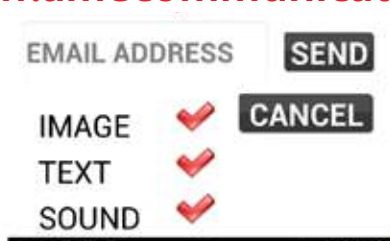
AME SIGHT

which can be magnified. Guidelines are placed over the image so that going from one line of text to the next is easy. The document can be saved to be read later or sent by email. The image is processed with OCR software and converted to plain text. The user of the app can switch between viewing the original image or pure text. If viewing just text, the font size, text and background colours can be changed to suit the user. Finally, the biggest improvement over existing solutions is that the text can be read to the user and the app can be controlled completely by spoken commands. This opens the app to users with more severe visual impairment than any existing product. For electronic communications, the app includes a web browser that switches to a plain text view and also allows the pasting of text from any source that can be copied to the tablet's clipboard, for example emails and pdf documents. As with physical documents, the text can be saved, emailed and read aloud by the app.

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www.amecommunicate.com

WHAT HAS GONE BEFORE THE CHRONICLES OF THOMAS COVENTRY THE UNBELIEVER As a young man a novelist happily married with an infant



Dell to sell assistive technology in the UK

PC company Dell is planning to sell assistive software and hardware online to disabled students in the UK.

The Texas firm has already set up a portal at www.dell-at.com aimed at educators and businesses in the US.

Dell intends to launch a UK equivalent for education in June with a support centre capable of answering questions online about assistive

technology and a training programme to help students and professionals learn about assistive technology.

"The Dell Assistive Technology Service is based on access, implementation and support," said



Kelli Hodges, a former special needs teacher who is running the project at Dell.

"We have created a portal with a configuration tool for parents and teachers that tells them what solutions are available and creates a [shopping] cart for them."

Dell will only recommend technology that has been tested and is certified to run with Dell PCs and other devices, says Hodges. Customers can buy both Dell and non-Dell products through the service.

"We are looking to assist people who already have assistive

technology," she explained. Dell help desk staff will be alerted to a customer's needs through the computer ID tag that is included in Dell products.

Dell has agreements with 33 assistive technology companies to distribute their products.

UK firms on the list include Dolphin (software for blind and vision impaired people), Texthelp (literacy software), Widgit (symbols) and Sonocent (audio notetaking).

Hodges is holding talks with UK teaching organisations and technology companies about the introduction of the Assistive Technology Service in the UK. ■ www.dell-at.com

Entrepreneurs get a leg up from Access to Work

Disabled entrepreneurs can now get support via Access to Work to start up their own businesses.

The support scheme will pay an individual's assistive technology, support workers and travel costs while they are setting up their enterprise.

The move is intended to boost the number of disabled people who are self-employed; currently half a million

people or 15 per cent of disabled people are in work.

"We've opened up our flagship programme so that disabled people have the same choice to start up their own business as everyone else – in every sector, from hairdressing to engineering and everything in between," said Minister for Disabled People, Esther McVey.

Budding entrepreneurs will get

support for setting up their business if they are enrolled on the New Enterprise Allowance (NEA).

The NEA provides expert coaching and financial support for jobseekers with a business idea.

Last year Access to Work helped over 30,000 disabled people keep or get jobs, with around 4,500 working in small businesses. ■

www.gov.uk

BRIEFS

Single site for tourist info

Charity Tourism for All UK has introduced an accessible tourism website that brings together information about hotels, restaurants and visitor attractions in a single, searchable database. Previously information about accessible facilities was only available on a variety of different sites. A range of other third party websites and a free mobile app will be launched later in the year.

www.openbritain.net

Claro's free AAC app

Claro Software has developed two apps for augmentative and alternative communication (AAC). ClaroCom and ClaroCom Pro are designed for people who have problems speaking and writing. ClaroCom is for users who have difficulties with social communication, while ClaroCom Pro has extra editing, privacy and communication features. Both products have speech output, allow users to edit their own phrases and offer word prediction. ClaroCom is

free from the Apple App Store for a limited period.

www.clarosoftware.com

Portable eye tracking

Tobii, the Swedish eye tracking software company, has produced portable versions of its PCEye controller. The smaller Tobii PCEye Go is primarily meant for laptop use and smaller desktop screens. The larger PCEye Pro is optimised for those working with bigger screens. ■

www.tobii.com

AbilityNet's Technology4Good seeks entries

AbilityNet's Technology4Good awards scheme for organisations and individuals involved in projects with a social purpose is open for entries.

Entrants can choose from eight categories and have until Friday May 3 to get their entries in. The winners will be announced at a ceremony hosted by Mariella Frostrup on July 4.



The categories and their sponsors are as follows:

■ **Accessibility Award** (sponsored by AbilityNet and the British Assistive Technology Association). This award

is made to an organisation that has best used digital technology to help an individual or group of people to overcome their disabilities.

■ **BT Get IT Together Award** (BT). An award for organisations that have helped others get online.

■ **Community Impact Award** (UK Online Centres, Camelot). Awarded to a local community project that uses computers and the internet to help people overcome disadvantage and achieve social change.

■ **Digital Giving Award** (NFP TweetUp). Given to people or organisations that use computers and the internet to generate support for charitable causes.

■ **Digital Skills Award** (Microlink). Recognises an organisation that is helping people of any age to learn the skills they will need for the digital age.

■ **Grow Your Charity Online**

Award (Media Trust).

■ **IT Volunteer of the Year Award** (IT4Communities, Barclaycard). This category is open to individuals who donate their time and IT skills to ensuring that people or organisations have good access to good IT.

■ **Local Digital Champion Award** (Go ON UK). This one is for people involved in helping disabled people online.

In April Young entrepreneurs aged between 14 and 21 will be pitching their ideas to a Dragon's Den style judging panel in a bid to win a £5,000 prize.

The Technology4Good Youth Awards are made to projects that use accessible technology to improve the lives of others. ■

www.technology4goodawards.org.uk/

T4GYouthAwards@groundwork.org.uk

Text with your toes challenge

AbilityNet, the IT for disabled people charity, will be challenging supporters to make a £2 donation to its coffers electronically without using their hands.

The organisation plans to hold a 'Text with your toes' or 'Look no Hands' event on Global Web

Accessibility Day on May 9 (www.mysqltalk.com/gaad.html), to highlight mobile accessibility.

"It is not really about the money," says AbilityNet marketing manager Mark Walker, "but to draw attention to the need for phones to be accessible to disabled people."

Dotcom entrepreneur Martha Lane Fox, newly created Baroness of Soho, was among those pushing buttons with their noses in a dry run for the event.

She was among guests at the launch at the top of BT Tower in London of AbilityNet's Technology4Good Awards who were invited to try hands off texting. ■

So2Speak aids speech recovery

A researcher at the University of Manchester has developed an app to aid the recovery of brain injury patients.

Called So2Speak, the Apple iOS software allows speech and language professionals to design therapy programmes for patients who have problems with talking or eating.

"Historically, if an individual

currently needs face, lip, tongue, or cheek exercises they are given written exercises by their therapist to complete on their own, which frequently results in poor compliance," says Claire Mitchell, who developed So2Speak.

The app has a range of video clips demonstrating exercises for patients' lips, tongue, soft palate, and jaw. Using the front facing camera

of an iPhone or iPad, So2Speak professionals can monitor a patient's progress.

"In these times of cost cutting and reductions to services, I felt it was really important to maintain the quality of service that we offer patients so that they continue to experience the best rehabilitation possible," Mitchell added.

So2Speak costs £39.99 from the Apple iStore. ■

www.so2speakapp.com

VoiceOver and out for Samsung in patents row

Assistive technology campaigners breathed a sigh of relief when Samsung lost a lawsuit over patents that would have seen the VoiceOver screen reader removed from Apple's iPhones.

Apple's VoiceOver function is used by blind and partially-sighted people, as well as those with literacy difficulties, to hear a description of what a device running iOS is showing by touching its screen.

But Samsung told a German court that Apple had failed to licence

a patent it owned which mentions pressing a button to make a handset describe its display. VoiceOver is switched on by triple-clicking the iPhone's home button.

"A lack of access to information is arguably the biggest potential barrier to inclusion in society for blind and partially-sighted people," a spokesman for the British Computer Society for the Blind told the BBC.

"If something as important as access to telephone technology had been blocked by the actions

of one company over another the consequences for blind people everywhere would be regrettable in the extreme."

John Paczkowski of the tech website All Things Digital called Samsung's action as the PR equivalent of punching yourself in the face.

"Samsung has now identified itself as a company willing to accept the loss of accessibility for the vision-impaired as collateral damage in its battle with Apple," he wrote. ■

Online service could cut care costs

Disabled people looking for assistance could find cheaper, more compatible carers via an online service.

CarePair is a free web app that matches disabled people with carers.

Users who require care create a profile based on the typical tasks a carer would have to carry out, how many hours of support are required, where the client lives and how much they are willing to pay.

They can also complete a survey on their tastes and opinions in six areas, ranked according to their importance.

Carers can also register that they are looking for work and fill in a skills and personality survey. CarePair then matches carers and users according to their suitability.

The service will make it possible for a disabled person to find care

at short notice using 3G location services to identify potential helpers nearby.

The service has been set up by Russell Smith (pictured right), who has muscular dystrophy and worked for assistive technology companies Widgit and Therapy Box.

He commissioned Coventry University's Health Design and Technology Institute to develop the CarePair service.

"I've attempted to create a service that makes a real difference to people in the same position as me, people who have a disability and require care assistance so they can live independently," says Smith.

"CarePair acts almost like a dating website, matching people according to their care requirements and also by their personal interests, aiming to make the most compatible pairings

of user and carer."

He told *Ability* that CarePair could help care users manage their Direct Payment budgets better,

reducing the cost of care by allowing them to employ carers directly, without having to use expensive agency services.

Some care users also use classified adverts or job sites, but there is normally a cost involved, which is not covered by Direct Payments.

CarePair could also make it easier for freelance carers to build up a portfolio of clients. ■

www.carepair.co.uk



The Isle of Man invests in school literacy support

The Isle of Man government is investing in assistive technology to boost the exam grades and job prospects of its schoolchildren.

All schools on the island will be equipped with a Kurzweil 3000,

a literacy support screen reader application that helps learners to read, write and organise their studies.

Children will be provided with Dragon Naturally Speaking and will

have access to the software at home.

Sight and Sound Technology, which is supplying the software, will support students and teachers from the company's headquarters in Northampton. ■

Mobile apps let users dial a date

Two new mobile phone apps promise to help disabled people get in touch with one another more easily.

UK company Silicon Networks claims to have developed the world's only iPhone app that allows disabled users to find people nearby for support, socialising and dating.

The real time app, called MiFinder, uses GPS to locate potential dates and social contacts. Users can Instant Message each other, send photos and agree an exact location to meet up.

The app's developer Gabriel Saclain says security is paramount and users can instantly block contacts, report inappropriate behaviour and hide their whereabouts from others.

He developed MiFinder after he worked with the police to combat

disability hate crime. The app has already been downloaded more than 40,000 times.

Users do not have to register or provide a password and email address to use the free app, which is available from the Apple Store.

"The social needs of disabled people can be overlooked," says Saclain. "They often need physical as well as mental support and they will find MiFinder a useful networking tool."

In the US, the Sendero Group has developed a prototype Bluetooth app intended to help blind people find each other at close range.

The People Finder app alerts a user with a vibration and a noise, when someone else with the app comes within 50 feet.

"As a blind person I'd love to be



made aware of when somebody I know is near by, so that I can meet with them," says Sendero's Mike May.

The People Finder app (<http://bit.ly/YWeRu5>) is part of a bigger effort by Sendero, which specialises in GPS for blind people, to use a variety of technologies for 'geosocial networking'.

www.mifinderapp.com

Monster leads way on web accessibility

Monster.com will be the first US job search website to cater for blind job seekers, after pressure from local authorities.

Under a deal with the National Federation of the Blind (NFB) and the Attorney General for Massachusetts, Monster has agreed to make its site compatible with screen reader software and to donate \$100,000 to blind programmes.

Monster has already made some

of its website accessible and has promised the job will be complete, including mobile applications, within two years.

Monster will also train its customer service staff to assist users who are blind and will establish a committee to oversee implementation of the agreement and other issues related to accessibility in the future.

The company has agreed to work with the NFB to encourage colleges

to incorporate accessible design and assistive technology in to their core curricula.

"Unemployment and underemployment in the blind community are significant problems and given the extent to which computers and the internet have become integral to our daily lives, it is essential that websites are accessible to everyone," said Attorney General Martha Coakley.

Website has all you need to know about AAC

Communication Matters has developed a website devoted to augmentative and alternative communication (AAC).

The organisation, which supports people with speech difficulties who need AAC, commissioned www.AACKnowledge.org.uk as a single source for information and research

into AAC.

The site has been funded by the Lottery and developed by Manchester Metropolitan University as part of a three-year programme by Communication Matters to collect evidence about AAC.

AACKnowledge contains case studies, frequently asked questions,

factsheets, glossaries, summaries of articles in plain English and links to other sources of information helping people to make informed choices about the support they need.

Communication Matters estimates 305,000 children and adults will need assistance from AAC at some point in their lives.

Developer aims to crowd fund speech app

Blind entrepreneur Chris Telesford has turned to crowd funding to complete the development of a text to speech Android tablet app for vision impaired people.

The IT expert has developed optical character recognition (OCR)



Chris Telesford aims to raise £20,000

software called AME Sight that will scan text, produce a magnified version and read it out.

He is now looking to raise £20,000 through the fundraising Indiegogo site (<http://bit.ly/XDFCQF>) to produce a stand to help vision impaired users position the tablet

over printed matter.

Visitors to Indiegogo are invited to invest money online in small business and charity projects.

AME Sight will be up against products such as Georgie, KNFB Reader and CapturaTalk that can also be used to produce speech output of text.

Unique features of the software, according to Telesford, are the use of onscreen guidelines to help users navigate magnified text and the fact that AME Sight can be completely controlled by voice commands.

When it is complete, AME Sight will consist of the software, a Google Nexus 10 Android tablet and a custom built collapsible stand that will sell at £1,600.

However, Telesford's company AME Communications is offering customers the chance to buy AME Sight for £1,200 through Indiegogo before the planned launch in May.

"In the UK over 97% of people who are registered blind have some degree of residual vision," says Telesford.

"At the moment the equipment usually provided is a magnifying solution that is expensive, non portable and offers limited assistance."

Telesford is also developing AME Hear, an app to assist the deaf in communicating with people who do not know sign language.

The app will have a built-in vocabulary of pre-recorded videos that allow someone who wishes to talk to the user to pick a sentence from a menu which is then signed to the deaf person by video. ■

www.amecommunicate.com

Apprentices struggle with gobbledygook

Dyslexic apprentices are being let down by the current apprenticeship system, according to the British Dyslexia Association (BDA).

The BDA says that arrangements for apprentices to access tests with the help of assistive software are "inappropriate".

The papers that are used to test apprentices' skills are not formatted properly for text-to-speech systems and produce "gobbledygook".

Papers are also only sent to test centres an hour before a test, says the BDA, meaning that many are unable to set them correctly for those who need access arrangements.

"The need to ensure open and equal access to these types of tests is crucial to the success of dyslexic apprentices," says the BDA.

The proportion of apprenticeships taken up by disabled people fell from 11.5 per cent in 2005/06 to 8.2 per cent in 2010/11, according to a report by the Business, Innovation and Skills Committee. ■

www.bdadyslexia.org.uk

Mobile telecare from Doro

Mobile phones are now being used to deliver telecare services to disabled and older people, giving them more freedom than fixed line services.

Doro has announced a second mobile phone designed to hook up to wearable wrist, neck and fall sensors, as well as motion, door, flood and smoke detectors.

The Doro Secure 681 is the first mobile phone to feature an embedded 'class one' telecare radio receiver that is compatible with Doro's sensors. Alerts can be sent to monitoring services via the internet or SMS.

Built-in monitors check and

report the charge level of the phone and sensor batteries. Geolocation services can be used to create safe zones and raise an alarm if a user strays outside them.

"Older people's attitudes are evolving, they are becoming more interested in and more influenced by technology," Chris Millington, managing director of Doro UK told *Ability*.

"Within 40 years, the over 80s will be the biggest users of mobile phones. We can take them on a journey towards using more sophisticated features such as cameras, email and the internet." ■

www.doro.com

Online tool could share care money more fairly

An online tool that helps disabled people plan their care requirements could help them learn about assistive technology and get a fairer share of resources.

24/7 Grid, developed by Time Designers, allows clients, carers and commissioners to work out what support a person needs and how much it will cost to provide it.

"The social funds held by local authorities are not a bottomless pit and as a result the eligibility criteria used in assessing needs have shifted from substantial to critical (needs)," says Rachel Mason, Time Designers co-owner.

She argues that 24/7 Grid will help to share out care budgets more fairly by providing a clearer picture of what each person is capable of.

At present those who are receiving benefits are reluctant to give them up, which has resulted in tougher criteria for other claimants.

The software highlights areas that can be supported with assistive technology and alternative community solutions.

"It calculates and displays the saving to the local authority

especially if telecare is replacing night staff costs," explains Mason.

Subscribers map their daily routine in half-hour blocks and plot how much help they need in each activity.

The process allows them to draw-up grids that identify areas of life in which they are independent, those in which they need to be supported by assistive technology and activities that need human intervention.

The grids can be used to maximise users' personal care budgets, plan support and communicate individuals' needs to carers.

"This is an aid, not a hard and fast judgement," says Mason, however it "helps in conversations with local authorities.

"24/7 Grid also enables a client to identify their areas of independence and skills which often are lost in a traditional Resource Allocation



Systems (RAS) assessment," says Mason.

"Sometimes I feel the RAS funding linked to level of disability encourages dependency as few will aspire to improve if it means their eligibility is affected."

At present the service is free, but Time Designers plans to introduce three paid plans: a standard one costing £1.99 for four weeks, a premium version at £4.99 and a professional plan that will cost £9.99 per month.

The prices vary according to the number of grids available to the subscriber. ■

www.247grid.com

Firms fail to ask for accessible web designs

Businesses and design agencies are failing to seize the opportunity of the 'blue pound', according to a study by design consultancy Fairley and Associates.

They are not designing websites or communications to be accessible to people with disabilities. Designers admit they don't know how to design in a way that improves accessibility, according to the study, called Design Industry Voices.

Ten million disabled people live in the UK with a combined annual spending power in excess of £80 billion, says Design Industry Voices.

The survey of almost 500 design staff paints a picture of businesses' lack of interest and design agencies' lack of knowledge in how to improve accessibility for those with disabilities.

Under one in 10 (9%) say that clients ask for all designs to be accessible to people with disabilities. Fewer than a quarter (21.9%) agree that clients ask for website designs to be accessible to people with disabilities.

Under a half (45.7%) agree that they understand how to design in a way that improves accessibility for

people with disabilities.

"The London Paralympics changed perceptions of disability. Businesses and agencies must better address the needs of the 10 million disabled people who live in the UK," said Rachel Fairley, lead author of the new research and managing director of Fairley & Associates.

"Design and digital agency staff report that less than one in 10 clients ask for designs to be accessible to people with disabilities, and fewer than a quarter for accessibly designed websites." ■

www.designindustryvoices.com

App helps people with macular disease to read

The Macular Society is calling on ebook publishers to unlock ereader security systems so that people with macular disease can see electronic text more easily.

Scientists from Royal Holloway University are launching a new iPad app to help people with macular disease, the most common cause of sight loss in the UK.

People affected by the condition find it difficult to read normally, because they have lost their central vision.

However, they can make use of their peripheral vision using a simple technique called eccentric viewing that involves looking slightly away from a subject in order to view it peripherally.

The new app, MD_evReader, is designed to aid the eccentric viewing technique for reading ebooks.

It enables users to scroll text from any ePub document in a single stream, like a news 'ticker'. The text is presented into the reader's best point of eccentric vision and helps them to maintain a 'steady eye'.

The speed within which the text

appears can be changed using a trackpad.

The app also allows users to make changes to background and text colour, and allows content to be displayed on digital television screens, enabling users to access very large font sizes.



How a computer screen might look to someone with macular disease

However, the success of the app relies on the cooperation of publishers, who often use Digital Rights Management (DRM) systems to lock publications and prevent unauthorised copying.

In effect these prevent the MD_evReader, and other accessibility

software, from unlocking the publication and displaying content in the best way for users.

This restricts the range of books that can be used with the app, to copyright free volumes and those whose publishers have relaxed their DRM systems.

"DRM is a major limitation," says Professor Robin Walker from the Department of Psychology at Royal Holloway.

"Of course we recognise the rights of manufacturers, authors and publishers to maintain their intellectual property, but we would urge them to consider lightweight DRM systems which would allow the MD_evReader to be used.

"Some publishers, including the Harry Potter books' Pottermore, have stopped using DRM and reported no adverse commercial affect," says Helen Jackman, chief executive of the Macular Society.

"We now need other publishers to follow suit so that those affected by sight loss have the same access to literature as everyone else." ■

www.macularsociety.org

Nomensa makes a statement

Digital agency Nomensa has come up with software that helps web owners write accessibility statements for their sites.

Owners enter information about their website into the Accessibility Statement Generator, which then produces text about the level of web accessibility, based on the Web Content Accessibility Guidelines 2.0 (WCAG2).

The Generator helps online visitors to understand which guidelines the website does or does not conform to, for example, providing a text alternative for images.

It also allows owners of sites that do not meet WCAG requirements to

say how they are working to catch-up.

"Although the majority of organisations want to make their sites available to everyone, there is a lack of clarity and knowledge amongst businesses when it comes to the factors which should be addressed in accessibility statements," says Alastair Campbell, director of user experience at Nomensa.

"This uncertainty means businesses may be underselling the accessibility of their sites, or are unaware of the additional work required to bring them up to speed." ■

www.nomensa.com

Guidelines for accessible design

Former RNIB chief scientist John Gill has updated his publication Guidelines for the Design of Accessible Information and Communication Technology Systems.

Aimed at developers, it covers application areas and technology with sections on the environment and groups of disabled users. The publication also provides useful checklists of assistive features for various types of disability.

The encyclopaedic document provides numerous links to further reading on the topic. ■

<http://bit.ly/XBuZ2l>

Bubble keys a boon to blind tablet users

Using touch screen phones and tablets could become easier for vision impaired people if a technique for creating three dimensional keys from a flat screen catches on.

US company Tactus Technology has demonstrated a method of creating keys using a fluid to produce bubbles on the surface of a touch screen device.

The fluid is held in channels beneath the screen which are squeezed to make keys appear and disappear.

"The vision that we had was not just to have a keyboard or a button

technology, but really to make a fully dynamic surface," Tactus Technology cofounder Micah Yairi told the CNET news service.

"So you can envision the entire surface being able to raise and lower depending on what the application is that's driving it."

Tactus still has work to ensure that the liquid key tops can't be easily punctured. There are also questions about how quickly the keys can be made to appear and disappear.

However, a prototype was demonstrated to a vision impaired person recently who declared the



The Tactus Technology buttons are pumped up with a fluid

keyboard was amazing, reported CNET.

Tactus Technology says the keys could be in production by the end of this year. ■

<http://bit.ly/Yme9D9>

Crick Software clicks with BETT judges

Crick Software's Clicker 6 literacy tool has won a sixth BETT award in the special educational solutions category.

The company, which was also runner up as company of the year, picked up its 'education Oscar' at a ceremony held during the BETT educational technology show.

Clicker is used on over half a million school computers and in over 90% of UK primary schools.

"The entry was thorough

and comprehensive and the endorsements and reviews very positive," said the judges.

"Building on a well established product, Crick has exploited the features of new technologies and software but importantly while focusing on ease of use and flexibility."

The HelpKidzLearn collection of software that helps young children with learning difficulties to play online from Inclusive Technology was

runner up.

Finalists for the coveted award included Apollo Creative, with its Apollo Ensemble assistive music software, AssistiveWare and Acapela Group for its Harry and Rosie text to speech voices and Dyslexia Action with RNIB, which scored with the Load2Learn publishing service.

Iansyst attracted the judges' attention with CapturaTalk for Android, an app that reads text out loud. ■

Face recognition may speed up Hawking's talking

The physicist Stephen Hawking may use facial recognition software to help him write and talk more quickly.

The chip company Intel has been working with the 70-year-old professor, who has motor neurone disease, to speed up the rate at which he can compose text and synthetic speech.

In recent years Professor Hawking's ability to communicate has slowed to one word per minute.

However, Justin Rattner, Intel's chief scientist told *Scientific American* magazine that he and his team are "close to a breakthrough" that could up the speed to 10 words per minute.

At present Hawking twitches one of his cheek muscles to operate a switch that selects letters on a screen. The movements are detected by an infrared sensor fitted to his spectacles.

Intel's technologists are working on facial recognition software

that could detect movements in other parts of his face such as his eyebrows, mouth and so on.

Other technologies under consideration include brain control and eye gaze tracking.

Hawking uses a tablet PC, equipped with a webcam for making Skype calls. A black box beneath his wheelchair contains an audio amplifier, voltage regulators and a voice synthesiser. ■

Technology boosts exam results, says MP

Assistive technology has helped to more than double the exam performance of children with special educational needs (SEN), according to Sarah Hodgson (pictured), shadow minister for children and families.

The number of children who passed GCSEs (including English and Maths) with a good grade between 2007 and 2011 rose from 10% to 22%, she told members of the British Assistive Technology Association (BATA), recently.

"22% is still way, way too low – but it's an amazing improvement nonetheless," she said at BATA's annual general meeting at the Colonial Club in London.

"If you look at the breakdown of improvement by the primary type of impairment, the proportion of those with hearing impairments reaching that standard rose by 46%; visual impairments 37%; multi-sensory impairments 85%; and physical disabilities 48%."

Hodgson was quoting from data gathered as a result of the Special Educational Needs Information Act, which she introduced as a Private Members Bill in 2007.

"It's a crude measure of how well we are providing for children's needs, I'm well aware, but that latest batch of information does make pleasing

reading," she said.

"And those increases will in no small part be thanks to the advances in support available to children and young people through assistive technology."

Hodgson introduced her audience to a young, deaf woman called Nadia Clarke, who shadowed the MP last year. Nadia relies on a Dynavox communication aid and gets about in a wheelchair.

"The machine Nadia uses – obviously combined with the other help she gets – helped her pass GCSEs, and it helps her write and communicate with people over the internet, and you just wonder what life would be like for her – and her family – if she didn't have that."

Peter White, the BBC's Disability Affairs Correspondent confessed he was a late convert to technology. He won praise from The Queen and TS Elliot, the poet, for his prowess as a Brailleur, but this method of communication cut him off from colleagues in the BBC.

He described some of the many scrapes his reliance on Braille got him into. He was glad he had embraced technology that allowed him to produce scripts and read them in both text and Braille.

"Technology for people in schools

needs to be a right as much as pen and paper. It is one thing never to have had access to something, but it is another to have something taken away."

In his review of the year, BATA chairman Mark McCusker pointed out that there has been a winding down of the Remploy network of factories and changes in the Equality Act making all schools responsible for the provision of assistive technology.

Further changes to Special Education Needs (SEN) funding will come into effect in spring 2013, he said. "We should not forget that there are also many new opportunities developing for AT, such as the Digital by Default programme.

"Then there is the evolution of Access to Work as one of the main pillars for supporting employees with disabilities in the workplace.

"The programme is not without its challenges, and interestingly when you delve into the numbers behind Access to Work, only 7% of the funds available are actually spent on assistive technology.

"Given that we see one of the roles of BATA as ensuring that those who need assistive technology get it, we need to continually push to improve this percentage and make Access to Work easier for employers to engage with." ■

www.bataonline.org



Allen homes in on really useful stuff

Disability champion Kay Allen is launching an assistive products market place called Really Useful Stuff.

The site, which is currently running under the Amazon affiliate scheme, will point shoppers in the direction of well designed products

and raise money for charities through donations from suppliers.

The store will major on user feedback and helpful product information, says Allen. Visitors are also invited to contribute blogs.

"We are not in it to make money but to be really useful so folk can find stuff for independent living easily and check out the prices and find out more about product design," she explains.

A former Head of Social Action and Inclusion at Royal Mail, Allen says the fragmented supply chain for specialist disability products and services made finding the right equipment a challenge.

"Throw into the mix bureaucracy and unnecessary assessments and you have a recipe for a cumbersome system that doesn't help anybody," she adds. ■

www.reallyusefulstuff.co

Sound developments

130 years ago Siemen's founder, Werner von Siemens, invented a phone for hearing impaired people, now new opportunities for communication are opening up

Robert Hobbs works in Sainsbury's supermarket in Beaconsfield, Hertfordshire. His job involves dealing with enquiries from customers who are looking for a particular item on the shelves.

Since Robert is profoundly deaf, communicating with shoppers is not straightforward. It used to involve writing on documents related to his work or using a whiteboard that could be wiped clean afterwards.

Neither method was very satisfactory: scribbling on his paperwork spoiled the documents, while he ended up with piles of inky tissues from cleaning his whiteboard.

Through the Deaf4Life forum, Hobbs heard about a device called the UbiDuo, a wireless communicator that enables people to talk face to face over distances of up to 120m via two displays and two keyboards.

Through Access to Work he was able to try one out. "I thought customers would probably not want to use the machine, but most of them were willing to type to me. I typed back where they would find products. It was brilliant."

The UbiDuo has hinges that can be used to clip two displays together so they won't be damaged by while travelling. Users can choose what font sizes they want – between 12 and 24 point. The device also allows users to save conversations and transfer them via a USB cable to a PC.

"UbiDuo isn't like a textphone, It uses its own network and does not require 3G, Wifi or Bluetooth," explains Robert. "The machine starts, connects automatically and five seconds from pressing the power button, you're ready to chat."

Robert says the machine has made his life much easier and allowed him to have the sort of casual chat with customers that hearing people can.

"I have to be careful what I write on paper when my boss is around. But with the UbiDuo you have open access as if you were chatting to customer.

"You can easily clear the conversation by pressing Shift + F7 and my boss will know nothing: a fantastic gadget that I am proud of."

Devices such as the UbiDuo are helping to make society much more inclusive for hearing impaired people.

Advances in technology have seen services such as text relay being updated to take account of video and smartphones, while big media broadcasters have committed to subtitling 100% of their programmes.

Re-spoken captioning in which trained operators repeat what they hear for the benefit of voice recognition software that then generates text output is widely used for TV subtitles and for events such as conferences and meetings.

This autumn, deaf children in the UK could be using this kind of live captioning in the classroom.

Australian company AI Media, which already streams text from remote captioners to children's laptops in the classroom via the country's broadband network, is planning to introduce a similar service in the UK.

Teachers wear microphones which relay their speech to captioners who produce text output which is then sent back to children in the classroom.

The AI-Live service also provides a chat feature that enables pupils to have text conversations with their teachers and with captioners. At the end of a lesson, students also have a written record of what was said.

Deaf people can use email, internet chat and SMS messages as an alternative to telephone conversations. The closest most deaf people can get to a real time telephone conversation is to use a textphone that transmits text in real time, character-by-character.

However, many call centres are just not equipped to deal with text input. Lloyds Banking Group recently installed a system called TextBox that answers incoming calls from textphones, smartphones or web pages.



Hearing technology has progressed but deaf people still struggle to communicate

UbiDuo

face to face Communicator

Access to Work
Approved

Freedom Through Communication

Now 2lbs Lighter with a 7" screen and HDMI out.

With the UbiDuo

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Deaf and hearing friends converse

Colleagues work more closely together

You can communicate instantly anywhere
because it's always there when you need it



Privacy in conversation

UbiDuo ensures a secure and private conversation whenever and wherever you need it with password protected conversations.



No more guessing when lip reading

Your communication on the screen means no more second guessing what someone said or meant.



No Wi-Fi or 3G needed

With the UbiDuo you don't need Wi-Fi or 3G. You simply turn it on and go. Secure wireless connection up to 500 feet. Now with HDMI output for easier sharing.



Communication in 5 seconds

The UbiDuo gets you communicating within 5 seconds, meaning you can chat with anyone, anywhere without waiting!



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www.microlinkpc.com

Freephone: 0800 999 2620
Mobile: 0330 555 0999
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Email: csa@microlinkpc.com

The software routes incoming calls to the appropriate agent's computer screen where a text conversation can take place.

Research into technology to combat hearing loss in the UK is generally underfunded. According to the most recent report by the charity Action on Hearing Loss, medical research organisations only spent £12m looking into deafness.

This is equivalent to £1.34 spent on research into hearing loss for every person affected, compared to £14.21 for vision, £21.31 for diabetes and £49.71 for cardiovascular research.

The result is that many deaf people are still not using technology that could make a big difference to their lives.

For example, Action on Hearing Loss estimates that there are 6m people in the UK who could benefit from a hearing aid – because they have a hearing loss of 35dB or more in their better ear – but only 2m actually have one.

"It's the stigma attached to a hearing aid and the perception that a hearing aid is visible and has an association with disability and ageing," explains Matt Norgate, NHS product manager at Siemens Hearing Instruments.

However, improvements in hearing aid technology are enabling many more people to take part in activities that involve sound, breaking down the sense of isolation so often associated with hearing loss.

Miniaturisation and digitisation, combined with increased power provide better amplification, as well as features that make using a hearing aid much more enjoyable.

For example, short range Bluetooth networking allows hearing aids to receive sound streamed from devices such as audio players, phones and televisions. Bluetooth connections also let hearing aid users make adjustments to their devices from handheld controllers.

Hearing aids can even communicate with one another using wireless technology. Adjustments made to one earpiece are relayed to the other using ear-to-ear wireless, as Siemens calls it.

In this way two hearing aids equipped with intelligent directional microphones can work together, focussing on where speech is coming from and ignoring background sounds.



Inside a Siemens Motion hearing aid

Europe's technology drive

European research into technology for people with hearing loss includes Hearcom, a project to develop new communication aids and VICON, an effort to develop a virtual model of a deaf person to aid in the development of consumer products that are accessible by hearing impaired people.

Hearcom has resulted in the development of:

- **Self-screening hearing tests over the telephone and the internet.**
- **A web-based rehabilitation service for new hearing aid users.**
- **Systems to enable public announcements to be sent directly to a hearing aid, or be provided in text.**
- **A wireless link that will connect hearing aids to modern technology such as mobile phones and entertainment systems.**

The ability to digitally tag sounds is also solving the long standing problem of feedback which sometimes can occur when someone is wearing a hat or chewing.

A feedback loop is created when all or some portion of the output is fed back to the input. The noise of chewing or a rustling hat can cause unpleasant whistling.

Siemens researchers have created digital hearing aids that tag incoming sounds with codes so that the sounds are ignored if they are fed back a second time. This coding together with techniques for inverting signals and shifting output to a frequency inaudible to the human ear help reduce feedback.

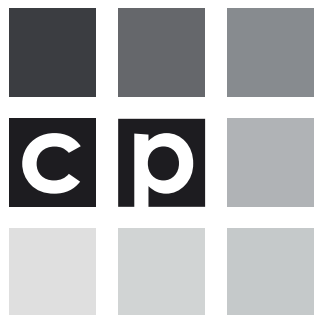
The processing power of modern hearing aids makes them much smarter than earlier models. Some Siemens hearing aids, for instance, are able to learn what volume and frequency settings their users prefer in up to six different situations. The device recognises these situations and makes adjustments automatically.

In April, Siemens UK will be launching the next generation of its BestSound technology hearing aids that incorporate a fast new microchip.

The processor, says the company, will support all of these features and add several more advances allowing wearers to hear more natural sounding amplified sounds that were previously outside their range of hearing.

Some 130 years ago Siemens founder Werner von Siemens invented a telephone for hearing impaired people.

"We can't restore hearing and give people normal sound. But we can go a long way to improving their quality of life, bringing people back to the world of sound," says Norgate. ■



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Free thinking

Stuart Pattison explains how mind maps provide a more organic way of organising information that is especially helpful to people with learning difficulties

From the scrap of paper with our weekly shopping on it, through the school essay plan to the millions of online pages that make up Wikipedia, lists play a critical part in disseminating information.

This list mania is surprising given that our brains do not process information in a linear fashion and that what we are essentially doing is forcing them to gather knowledge from a rigid structure.

Mind mapping is a technique used to mirror the way the brain actually works in order to process and develop information.

Mind maps have been around since antiquity: Greek thinkers used them. However, they were popularised in the 1970s by Tony Buzan, who has actually copyrighted the term mindmapping.

Buzan's iMindmap is a widely used computerised mind map and his books are well worth reading to gain an understanding of how mind maps work.

Since Buzan's early efforts many other programs have been developed and further research carried out into the effectiveness of mind mapping.

The development of the internet has meant that there are now many different options, all with their individual strengths. There has never been a wider choice for someone wanting to explore the different ways that mind maps can be used.

The main advantage of a mind map is that it does not display information in a linear fashion. A traditional list suggests that there is an order to things which may not exist in reality. In a mind map every idea or fact is treated equally and independently.

Branch lines

A mind map enables all information on it to be given equal consideration and ideas can be linked and expanded. The expansion around the central idea means that things can travel off in their own organic manner with some branches being explored in some depth while others remain relatively simple.

It is this 'no bad idea' approach to mind mapping that makes it so valuable when working with people who have additional or special educational needs.

The additional benefit when using ICT-based mind mapping software is that the ideas are not 'pinned' to the page and can be moved around, changing how they fit into an ideas grid.

Mind maps are used quite a lot in classrooms but they tend to be used in a somewhat half-hearted way. Teachers tend to deploy them for initial information gathering about what the students know and then again at the end of the topic to show what has been learnt.

There is much more that a mind map can do and with the proliferation of excellent software they do not have to be used in isolation because many programs can be linked into others, making them a valuable part of the creative process.

Flexible thinking

Mind maps can be used in three main ways in a classroom; one is to help produce a plan, be it for an essay, story or experiment. Another way is to help memorise information and the third way is to aid creativity. In all these techniques the flexibility of mind maps means that they are able to assist the student at all stages.

The first stage where they can be useful is to gather together information. This can be done individually by plotting out what you already know.

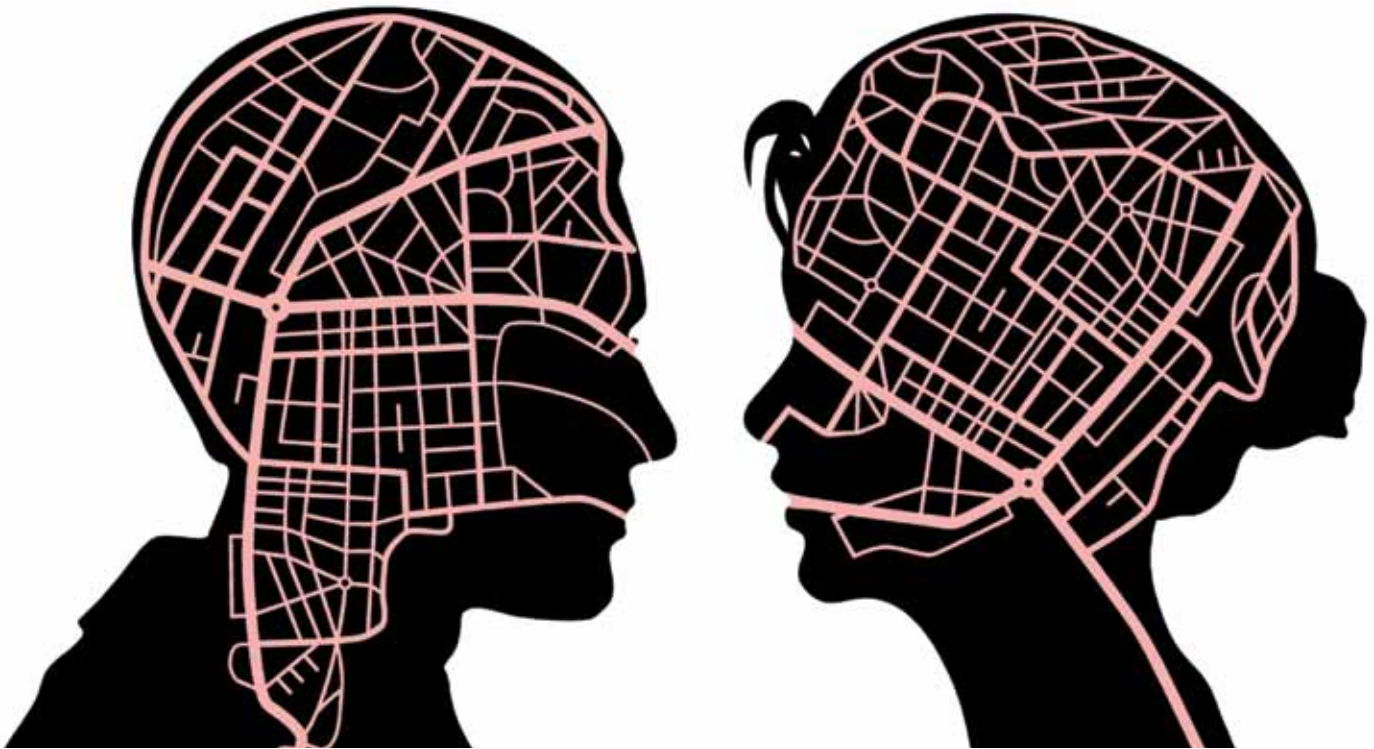
This is where mind maps are especially useful as all information can come from the brain unfiltered onto the page. This is particularly helpful when working collaboratively. Most software enables you to share maps with others who can add their thoughts and ideas to the map; building up a picture of what you all know.

Moving on from this, information gathered from a range of sources can be added to the map. This can be done in a random way by all contributors with their knowledge appearing with equal value and no worry of how it fits in.

This is especially useful when planning as it enables you to find out what you know and fitting the plan to it rather than trying to find information relevant to headings which have often been drafted before you really think about the project.

Once the information is onto the mind map the next stage is to sort out what is important. This can easily be done using software as information and ideas can be moved, discarded and promoted within the map.

This can be done by changing colours, increasing the size of entries and moving ideas away or towards the centre of the map. Once this has been done the ideas can be linked together to start to give structure to the plan.



Mind maps come into their own in collaborative working

The joy of mind mapping software, compared to traditional methods, is that all of this can be done within the same plan by any number of people.

The drawing together of the links will formalise the structure of the map and mean that plans can be created. This is where the features of many packages come in handy as plans can be exported to a wide variety of different formats.

It is wrong to limit the usefulness of mind maps to just planning projects though as they can be used in many different ways. Because information is broken down into manageable chunks, mind maps can be an important aid to memorising information. Equally, they can be used to develop ideas creatively.

There is a large range of software both free and available to purchase to help with mind mapping. An extensive list can be found on Wikipedia in an article that lists mind mapping software. At first it seems like a simple decision to make as 'free' is always the best price.

However, it is well worth considering paying for software as it is usually of a higher quality and offers many more features that enhance the usefulness of the software, resulting in time savings that more than offset the cost of the software.

A good example of this is Mindview 5 from Matchware which offers the ability to export maps in a variety of different ways such as organisation charts and Gantt charts. The software also links in closely with Microsoft Project. In addition many free programs are very limited in what they offer and users have to pay to unlock the more helpful features.

Mind maps are useful for all learners regardless of their abilities but they really come into their own with learners with special needs. The use of the visual medium is something that is very useful for learners with conditions such as autism.

Images serve to reinforce ideas. Software such as that provided by Spark Space and Inspiration do this by providing a collection of education-based images that can be attached to maps, together with a user's own images.

Dyslexia is also an area where mind maps have been proven to aid learners as they are able to organise and access information in a way that makes it much more meaningful to them.

The lack of rigidity that mind maps offer reduces the stress involved in accessing information. This is of great use, not only to those with dyslexia but to all with learning difficulties.

Mind mapping is an excellent and underused technique for aiding all learners to best fulfil their potential.

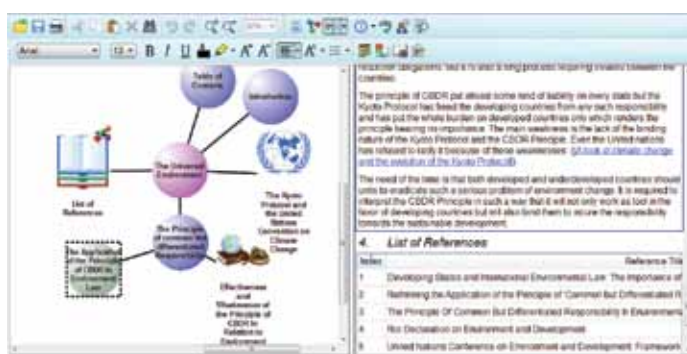
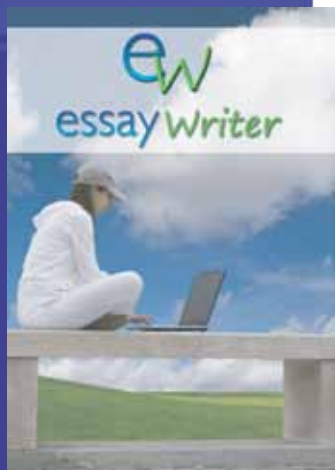
Mind maps mirror how the brain itself processes information and good quality mind mapping software like those listed enables learners to be able to go from a basic idea to a high quality end result on the screen in an organic and efficient way. ■

Stuart Pattison is head of ICT Vision at St Hugh's Communication and Interaction Specialist College, Scunthorpe.

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Solving the PDF problem

Ted Page of DIG Inclusion has been working with *Ability* and other organisations to improve the accessibility of our PDFs. Here he explains that it is not as difficult as many think

This last year has seen significant developments in PDF accessibility.

Highlights have included the publication last summer of the first ever international standard for PDF accessibility, as well as game-changing improvements to the free NVDA screen reader.

But more importantly, there has been a very noticeable change in mood: a widespread and growing awareness among many organisations that online PDFs are web content like any other, and that they can and should be made fully accessible.

That having been said, many organisations do still have a PDF problem: the existence of large numbers of inaccessible PDFs on their websites.

This article will look at some common misperceptions that sometimes constrain organisations from acting to resolve this problem, as well as suggest a roadmap for those wishing to tackle the issue.

And lastly, we will explain how we at DIG Inclusion have collaborated with the *Ability* production team to produce the first ever tagged PDF edition of the magazine.

There are still many misperceptions about PDF accessibility. Among the most common of these are:

- **PDF is inherently inaccessible.** This may have been true ten years ago, but PDF now compares very favourably with HTML in this respect.
- **It's too difficult.** On the contrary, the basics can be learned in half a day, and once you know how, in many cases it will be easier to create accessible documents than inaccessible ones.
- **It's too expensive.** As with any content, quality finishing work does take a little time. However, provided that you approach it correctly (and there definitely are wrong ways of going about it), there is nothing exceptional about PDF in this respect either.
- **Word or text only files are acceptable alternative formats.** No, they're not. Text only files by definition

have no structure and so are inherently inaccessible for all but the simplest of documents. Word is better, but readers will still experience real difficulties when trying to navigate data tables or most forms, to cite just two examples. Not so in a properly formatted PDF.

So how should organisations set about solving the problem of a website full of inaccessible PDFs?

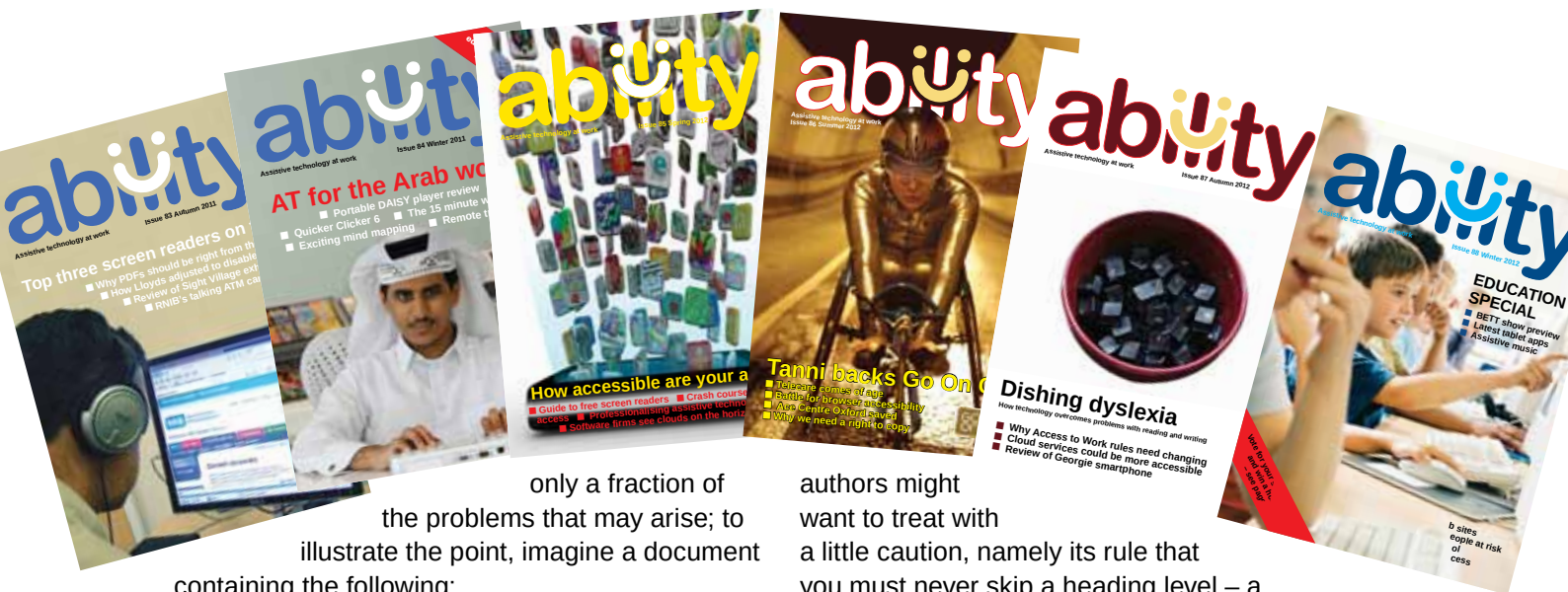
In a nutshell, accessibility should be regarded as a core skill within your document production and publication teams, and acquiring such skills will require training. In a typical organisation the process might look like this:

- First, train your content authors to use Word correctly in order to produce PDFs that are as accessible as possible, and that will require minimal subsequent finishing work.
- Second, because making content accessible at source is so much more efficient than fixing it retrospectively, organisations should insist that their external graphic designers get appropriate training (typically in InDesign). This really is 'route one' to cutting costs.
- Third, train selected staff (such as web editors) in PDF accessibility finishing work using Adobe Acrobat.
- Fourth, develop author guidelines and organisation-level policies that define both the benchmark (see below) and how to achieve it (based on the training). Completing these steps will enable organisations to ensure that all new PDFs that they publish will be accessible. That just leaves any existing PDFs. So step 5 might be:
- Fix any existing PDFs that are regularly downloaded from your site. Depending on your in-house resources, it may or may not be more efficient to outsource this process. In either case, it is imperative that organisations understand what the benchmark should be, and to regularly test against it. Again, this is as true of PDF as it is of any other web content.

But, what is the benchmark? It is important, first of all, to establish what the benchmark should not be. When organisations write their policies and author guidelines it is vital that they do not fall into the trap of assuming that a piece of software calling itself an 'accessibility checker' will check a document for accessibility and give a definitive yes or no answer.

Useful as they are, automated checkers can identify





only a fraction of the problems that may arise; to illustrate the point, imagine a document containing the following:

- Headings tagged as paragraphs.
- Inappropriate alt text (for example, alt text of 'Pit Bull Terrier' on an image of a kitten).
- Links that are inoperable via a keyboard when a screen reader is running (standard output from InDesign CS5 or earlier).
- A table of contents containing no links.
- A long, complex document containing just a single bookmark or two.
- Bookmarks with inappropriate zoom settings.
- Tables laid out using tabs or other white space characters.
- Incorrect page numbering.
- Incomprehensible reading order for footnotes or other content items.
- An English language document marked up as being, for example, in Arabic.
- An inappropriate document title.

And so on. These are all common and serious accessibility problems, and there are plenty more where they came from. None are likely to trouble an automated accessibility checker.

Many organisations will already be familiar with WCAG 2.0 (the Web Accessibility Content Guidelines 2.0) as the benchmark for accessibility for their web content. What is perhaps not so well known is that there is now a dedicated PDF accessibility standard – the International Organisation for Standardisation's ISO 14289-1, better known as PDF/UA, which complements WCAG 2.0.

PDF/UA contains detailed guidance for authors on how to address most WCAG 2.0 success criteria. It also includes a few requirements that are not covered in WCAG 2.0, such as its conformance requirements for fonts.

However, there is one PDF/UA requirement that

authors might want to treat with a little caution, namely its rule that you must never skip a heading level – a requirement this author strongly disagrees with, on the grounds that being forced to comply with the rule can actually impede accessibility (see PDF/UA and skipped headings, <http://tinyurl.com/c2e2522>, for a detailed exposition of this point).

That apart, PDF/UA undoubtedly constitutes a significant step forward in assisting organisations to make their PDFs accessible as well as providing, in conjunction with WCAG 2.0, a clear and consistent benchmark for doing so.

In order to verify the accessibility of a PDF, at a minimum you will need to test it with a screen reader (but note that tests with other assistive technologies can also be highly revealing).

Until quite recently, the options for testing with a screen reader were limited or at least expensive, but happily, that is no longer the case.

Although JAWS is still the industry standard, for most testing purposes NVDA is now as good as JAWS, and in some respects even better (its ability to read a table summary being a case in point).

The basics of using a screen reader can be learnt surprisingly quickly, and the benefits will be more or less immediate: certain types of problems will be obvious even to a complete beginner.

Finally, as mentioned above, DIG Inclusion is proud to have collaborated with the *Ability* magazine production team to produce the first ever tagged PDF version of the magazine.

Our aim has been to make the PDF accessible to as wide a range of people as possible from the outset, but also to work together in the future to seek further improvements.

Please feel free to contact us with your feedback on the accessibility of the PDF at hello@diginclusion.com ■

Ted Page is a Director of DIG Inclusion
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Safe walking

Steve Bonner takes a stroll round the latest technology for ensuring that vulnerable people can get about without running into difficulty

What could be better than going for a nice walk or a trip into town on the bus: getting exercise and fresh air, socialising with friends and hunting out those bargains in the sales?

These are the sort of activities which most of us take to be the norm, but a physically disabled or cognitively impaired person may lose the self-confidence to keep themselves active and in touch with friends and relatives.

A loss of socialisation can be debilitating physically and mentally. As well as the physical benefits of light exercise, it has also been shown that walking even short distances helps to alleviate mild depression.

For an older frail person or someone with a cognitive impairment or learning disability, their main hurdle may be the concern that they will become lost or disorientated and not be able to find their way back home again. Of course this isn't just their worry; it may be a major concern for their relatives and loved ones too.

Less than 10 years ago these issues would have seemed insurmountable, but now with the ubiquitous mobile telephone, and the emergence of reliable GPS technology, there are many solutions out there for 'safe walking'.

Safe walking is the recently coined term for the use of equipment and practices to allow a vulnerable individual to regain independence beyond their home.

Community or social alarm equipment which uses a pendant, pull cord or a telecare device such as a fall sensor will only work either within someone's own home or in close proximity to it. Safe walking devices will support a vulnerable or at risk person when they are beyond the bounds of their home.

Simplified mobile telephones

Mobile telephones have become more sophisticated and packed with mp3 and mp4 players, radios and video cameras. They have also become more compact with either touch screens or fiddly QWERTY keyboards: great for the younger, able speed texters of this world, but baffling for everyone else.

Similarly, modern smartphones and their apps are very useful for wayfinding, but are quite often beyond the technical capabilities or purses of many older or vulnerable people.



Simple mobiles can keep older walkers safe

Thankfully, a new generation of simplified mobile telephones has appeared on the market. Call them 'oldie' phones if you will, but with fewer bells and whistles, with bigger buttons and larger displays, they are far more appropriate for an older person, someone with a learning disability, or with impaired dexterity or vision.

SOS mobile telephones

Added to the selection of simplified mobile telephones are those that provide an SOS 'speed dial' function. Those users familiar with a community alarm will find that the red SOS button featured on these mobile telephones does pretty much the same job.

A problem arises? Press the red SOS button. The phone will dial a pre-programmed number. If the recipient's number is another mobile telephone, a text message will also be sent. If the first number dialled does not answer, another number on the list will be called and so on.

The added benefit of these simplified, SOS mobile telephones is that most of them come SIM-free and unlocked. This means that you can swap the SIM from your existing phone (so you can keep your old number) or you can simply buy a 'pay as you go' SIM, so you

don't have to take out potentially expensive contracts or change to a different network.

GPS mobile telephones

Even more useful is the mobile telephone which harnesses GPS location technology. When the user presses the SOS button not only will it make a call but it will also send a text message (to another mobile telephone) with the location of the user when they pressed the SOS button.

If this information is transferred into Google Maps or similar, the recipient of the call can locate the other person. In optimum conditions, the location co-ordinates are usually accurate to five metres!

In addition, even if the user of the GPS mobile telephone doesn't make an SOS call, they can be located. This is done by sending a special text message to their mobile telephone and their telephone responds by sending a text message back with their location attached to it. This is known as 'pinging'.

If that wasn't clever enough, some GPS mobile telephones can allow an alarm to be sent out if the user strays too far away from home. If they would normally only go to the local shops 400 metres away, a 'geo-fence' can be set up so if they travel further than that distance an alert call can be put out. Again, this will be accompanied by details of their actual location.

Perhaps the most cutting edge of this current range of devices is a GPS mobile telephone which is built into a wristwatch. In the style of a larger sports or diver's watch, so not necessarily to everyone's taste, it is a fully functioning mobile telephone with hands free speech: science fiction has finally become science fact.

GPS location tags

An alternative to the simplified GPS mobile telephone is the GPS location tag. This is worn by the user and doesn't generally require them to operate anything to make it function.

A carer or relative can use the tag to locate their position if they go missing or don't come home at their usual time. It is able to be pinged and have a geo-fence set up like the other GPS devices.

Some GPS devices including mobile telephones and location tags will also allow a carer to silently make a call to the device and listen in, just in case some sort of emergency situation is taking place. To protect the privacy of the user this can only be done if the carer knows the PIN number protecting the GPS device.

The issue with any GPS device is the fact that someone may fail to go out of the house without it, or otherwise it has to be inserted into a piece of clothing to avoid this happening.

One recent development is that of the GPS Shoe. A

GPS locator is inbuilt into one of a pair of shoes, and can be pinged or tracked constantly. The GPS technology and the batteries that power it are built into the sole of the shoe so cannot be removed. The first occasion I think anyone will have come across when you need to plug your shoes in for a recharge...

So we have mobile telephones, wrist watches, tags and even shoes that can have GPS capabilities. Where is technology taking us next? Older, frail people or someone with limited mobility often rely on a walking stick or cane to get around.

Electronics manufacturer Fujitsu has now developed the ultimate in walking sticks. Still in a prototype stage, the stick is capable of locating a user. It can also be programmed to provide the user with directions, indications of how far they have gone and warn them if they have gone off course.



Fujitsu's prototype GPS cane

It has inbuilt sensors in the handle that can also take biomedical readings such as pulse and skin temperature. So it should be able to tell someone if they are overtaxing themselves on that walk to the shops. It will also detect if the user has fallen and can be used to trigger an alert.

The only drawback is that it doesn't take account of the fact that the user may leave their GPS walking stick in the Library or the Post Office.

So, safe walking is all about allowing a person to have the confidence to regain or retain their independence, keep them fit and healthy, encourage socialisation and reduce the likelihood of isolation and all the time keeping them safe. Time to go for a little stroll I think. ■

Steve Bonner of Lifestyle Choices (Technology) is an independent assistive technology and telecare consultant and trainer. He is currently scheduling sponsored one-day technology awareness workshops. Depending on the uptake, these will either be free of charge or at a greatly subsidised rate. For further details please contact Steve on: 0750 230 3898 or lifestylechoicesat@live.co.uk

On the move

Exoskeletons, autonomous vehicles and new types of wheelchair all promise to help people get about, but users need to drive these exciting developments

Johnny Dawson-Ellis moved gingerly across the stage at the Stelios Awards for disabled entrepreneurs assisted by the latest mobility aid to reach the UK.

He was wearing a ReWalk exoskeleton, a pair of robot legs that provide motorised assistance in walking. The battery powered device is one of a new breed of wearable robots made of lightweight carbon fibres.

"You can't explain what it feels like to be sat down all the time when you are talking to someone. Whereas, if you are the same height it makes a huge difference," says Dawson-Ellis.

"The gait was so natural that a lot of people thought that was me walking. The most difficult thing is getting your head around what you have to do to move."

He is looking forward to the day when he can walk up to a bar and order a drink. "Being able to stand up is going to revolutionise a lot of people's lives."

The Israeli ReWalk system is sold in the UK by Cyclone Technologies, whose founder David Hawkins received the £50,000 disabled entrepreneur prize in December from EasyJet's Stelios Haji-Ioannou.

The ReWalk is controlled by on-board computers and motion sensors, enabling users to initiate each step they take.

The system controls movement using subtle changes in a user's centre of gravity. ReWalk senses a forward tilt of the upper body, which then triggers a step. The exoskeleton mimics natural gait and can help users reach a natural walking speed.

In common with other exoskeletons, the ReWalk is mostly used under medical supervision for rehabilitation; the suits are still in their infancy. At present they are expensive, costing upwards of £100,000.

However, those involved with the technology are convinced it will be possible to buy them as easily someone purchases a pair of jeans.

"The dream at the end of the day is to be able to walk into a sporting goods store and pick up an exoskeleton," says Russ Angold, founder of Ekso Bionics, an American exoskeleton company.

In the meantime, there is plenty to be gained from more modest improvements to mobility aids. Impairments that affect mobility, carrying and lifting are the commonest disabilities in the UK, according to the most recent Family Resources Survey.

There are an estimated 750,000 wheelchair users here with 20,000 new users joining them each year. So, it is not surprising that designing a better wheelchair is almost a national sport.

One wheelchair user has counted 35 new designs ranging from the spectacular to the bizarre, but most concept wheelchairs never make it to market, even if they do manage to receive some sort of funding.

One wheelchair that will find a market is the Chair 4 Life, a modular children's wheelchair developed by the Renfrew Group, in partnership with the NHS

National Innovation Centre.

The chair is minimalist and can be adapted quickly. The height of the seat, the size of the wheelbase and the position of features such as arm rests are all adjustable. Renfrew Group, which won a design competition to build the chair in 2012, has included a vertical lift as standard.

There is also scope for third party suppliers to provide add-ons. Chair 4 Life can be modified to accommodate monitoring and care equipment, extra storage and accessories.



Most Exoskeletons are used for rehabilitation



Chair 4 Life is aimed at four to 18-year-olds

"There is an age old problem with any adaptive technology that they do the job functionally but they don't enhance the life in any way," said ergonomist David Hitchcock.

"It could be it is the wrong colour or it is the wrong fabric, more often it is more complex and it is the way the whole thing is put together. [Chair 4 Life] has been driven by people saying 'this is what I need: you create it'."

The iconic 1970s TV series *Knight Rider* featured an intelligent car that could drive itself and talk to its occupants. At the time it seemed a fanciful notion but autonomous vehicles are fast becoming a reality.

Hitachi is the latest manufacturer to demonstrate its take on the idea with its single person Robot for Personal Intelligent Transport System (ROPITS).

Developed for elderly and disabled drivers, the vehicle is intended for pavements and footpaths, rather than roads. It is equipped with sensors and guidance systems to help it navigate around bumps, potholes, and pedestrians.

The updated mobility scooter, which travels at speeds of around 4mph, has a touch-screen map linked to a GPS device to provide general navigation. The vehicle avoids more immediate hazards with the help of 3D laser distance sensors and stereo cameras fixed to the front.

ROPITS can also cope with curbs and flights of steps. It has actuators fitted to its wheels that adjust their height as they encounter changes in depth, while a gyro sensor ensures that the vehicle stays upright when negotiating uneven ground. In case of an emergency, passengers can override the system and take control with a joystick.

There is a lot of interest in self-driving vehicles. The

city of Masdar, in Abu Dhabi, is equipped with unmanned solar-powered vehicles that are pre-programmed to shuttle passengers between specified stations and Berlin has experimented with driverless taxis.

But the leader in the field is Google. In California, adapted Toyota Prius cars have logged more 50,000 miles without a human having to take the wheel. There has only been one accident – caused by a car driven by a human that ran into one of them.

"Too many people are underserved by the current transport system. They are blind, or too young to drive, or too old, or intoxicated," declared Google's founder Sergey Brin.

Several US states are in the process of introducing laws that will allow autonomous vehicles on their roads. But Robin Christopherson, AbilityNet's head of digital inclusion, urges automobile developers not to overlook the needs of disabled people.

"You do really need to think at every stage at what is required to meet everyone's needs and not just design for the ordinary person," he said.

Autonomous vehicles need to have voice output, for example, if blind people are to use them on their own.

The quest to improve the technology that provides mobility continues apace. Not even the traditional walking stick has escaped the attention of technologists looking to build a better mousetrap. The Stedifoot is a foot shaped aluminium attachment that fixes to the bottom of a walking stick or crutches and is designed to prevent them from slipping.

One thing is clear: what might seem to be today's flight of fancy could well turn out to be tomorrow's commonplace. ■

Useful sources of information

■ **The Motability Scheme enables disabled people to exchange either their Higher Rate Mobility Component of Disability Living Allowance or their War Pensioners' Mobility Supplement to obtain a new car, powered wheelchair or scooter.**

www.motability.co.uk

■ **The Disability Living Foundation publishes factsheets to help people choose a mobility aid.**

www.dlf.org.uk

■ **The Ricability organisation compiles independent *Which?*-style reports on cars, wheelchairs and scooters.**

www.ricability.org.uk/

Keeping on an even keel

The Paralympics have sparked an interest in sport for disabled people. Now it is up to the authorities to deliver the necessary equipment and facilities

Last September 15-year-old Natasha Lambert sailed nearly 60 miles single handed around the Isle of Wight in her boat Miss Isle Too.

Sailing is not an easy sport at the best of times but the Isle of Wight's peculiar combination of strong tides, treacherous currents and heavy shipping traffic is particularly challenging.

All the more so when, like Natasha, you have arthertoid cerebral palsy and are not able to pull the ropes that control a boat's sails or to steer it by pushing or pulling on a tiller.

The ropes and tiller on Natasha's 21ft, pink-painted Mini Transat Zero class boat are operated by electric motors. The front sail, the jib, is designed to work on its own.

She sits in a specially designed canting seat that keeps her upright with an air control pipe permanently in her mouth. The pipe allows Natasha to operate the controls by sipping and puffing on a single switch and is fixed to the helmet she always wears.

The helmet protects Natasha's head from any sudden movements. On her hands she wears boxing gloves because when she grasps something she finds it difficult to release her grip.

In front of her is a GPS display that shows her where she is and below that an indicator that tells her the position of her rudder.

The rudder is moved by a series of hydraulic rams, while the ropes that control the mainsail are moved by electric winches. Natasha can switch between the two by using her tongue on her pipe.

The electronics, which have to contend with the wet, salty conditions at sea, were designed by her engineer father Gary Lambert. But the systems on the boat are similar to those used by other paraplegic sailors.

During the voyage her lips chafed on the air control

pipe, causing them to bleed, but Natasha was determined to complete her sail around the island.

"Absolutely awesome day yesterday, started at 6am in very calm sea no wind and finished 6.30pm in a moderate sea with gusts up to 28mph completely shattered," she posted on Facebook.

She had some help from a crew member on the 12 hour trip. The helper raised and lowered the sails, gave her refreshments and took in and let out the

reefs that make the mainsail smaller or bigger according to wind conditions. Otherwise she sailed alone.

Natasha, who lives in Cowes, the home of British sailing, went in an anti-clockwise direction from Cowes round the island, via The Needles and on to St Catherine's Point.

She raised over £15,000 for three charities: Scope, the Ellen Macarthur Cancer Trust and the Royal

National Lifeboat Institute.

For her efforts she received special awards from the Royal Yachting Association and the RNLI. Now Natasha has her sights set on a voyage to France this year, but her ultimate aim is to cross the Atlantic.

Taking up sailing was all Natasha's idea: the Lambert's are not a sailing family. "It adds to her self-confidence. She has control which in all other areas of her life she doesn't have," says her father. "We are determined she is not going to just sit in her wheelchair and watch TV."

Sailing is one of the very few



Miss Isle Too made it round the Isle of Wight



Natasha's GPS display



15-year-old Natasha and two of her helpers

sports in which both disabled and non-disabled people can participate on equal terms.

Some 37,000 disabled people have taken to the water thanks to the Sailability scheme run by the Royal Yachting Association (RYA).

Many sailing boats can be readily adapted to an individual's needs and the number of boats specially designed for disabled people continues to increase, says the RYA.

There are a wide range of adaptations on the market including speaking compasses, hoists, special pontoons to make getting in and out of a boat easier, protective helmets, and electric winches for pulling in and releasing ropes.

The Equality Act has encouraged many sailing clubs to make their facilities more accessible. They have installed disabled changing and shower facilities, and recruited trained volunteers.

The effort paid off last year. In the Paralympics, Helena Lucas became the first British sailor to win a gold medal in the games, beating an all male field in her 2.4mR boat.

The Paralympics was a great showcase for disabled sport. Some 66% of disabled people said in a survey carried out by charity Whizz-Kidz that the Paralympics had inspired them to get involved in sport.

Those who took part in the survey wanted to see disabled sports such as Boccia adapted so that non-disabled people could participate.

Parents argued that schools' sports staff should forge links with clubs to learn more about Paralympic sport and to share equipment and facilities.

Despite steady growth in the number of disabled people playing sport since 2005, non-disabled people are still twice as likely to take part regularly.

Just 18% of disabled adults undertake physical activity for more than 30 minutes a week, compared with 38% of non-disabled adults, according to Sport England.

One problem is that facilities are just not accessible. When charity Leonard Cheshire carried out a crowd

sourced survey of 300 gyms it found that many were not only inaccessible, but also difficult to navigate and expensive to join.

Some did not have specialist gym equipment and nearly half lacked staff trained in disability awareness.

Nearly a third of gyms did not have an automatic door at the entrance, while some were fitted with heavy internal doors that were difficult to open.

Although many gyms had lifts, just over one in five were not working properly. A common problem was that lifts were too small for larger wheelchairs and control buttons were set too high.

A quarter of swimming pools did not have hoists to support disabled people to get into the water, while 31% of gyms did not have any fitness equipment that was suitable for disabled people.

Generally, young disabled people find it a struggle to get access to the right equipment. Ruth Owen chief executive of Whizz-Kidz points out:

"For every athlete making headlines through their extraordinary achievement, there are still thousands of disabled children and young people waiting for the right equipment – and simply the chance of a full and active childhood."

There are approximately 70,000 disabled children and young people in the UK who have the wrong wheelchair, says Whizz-Kidz, and many do not even have the right kind of shoes.

Some sports just require minor modifications such as using a laser instead of a starter pistol to start a race so a deaf runner can compete.

"But if we could call for one thing only, it would be that young people are given the right equipment as early as possible," Owen maintains.

There seems a better chance than ever before that will happen, following a recent decision by Sport England, the funding body for British sport, to pump £2 million into the English Federation of Disability Sport (EFDS) over the next two years.

The support for the charity is in addition to Sport England's wider investments in sport for disabled people, which include:

- 44 projects benefiting from £10.2 million of National Lottery funding through its Inclusive Sport fund.
- 40 different sports receiving Sport England funding over the next four years for specific plans to get more disabled people taking part.
- Over £13.6 million for specific disability participation and talent programmes across those sport in addition to inclusive programmes within the overall £493 million funding package.

One thing is certain: if campaigners display the same get up and go as Natasha Lambert, the wind is set fair for many more disabled people to take part in sport. ■



ITCanHelp
Trouble with your computer?
 We are a network of volunteers who provide free assistance to disabled people in their own homes.
 Freephone: 0800 269 545
help@itcanhelp.org.uk
 ITCanHelp is run by AbilityNet a charity registered in England & Wales (1067673) and in Scotland (SCO39866)

LAPD – Lewisham Association of People with Disabilities

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www.lapdonline.org.uk

LIFESTYLE CHOICES

Assistive Technology and Telecare Awareness Workshops

How much do your staff know about Assistive Technology (AT) and Telecare?

Some basic technology awareness sessions with practical hands-on use will allow them to:

- Improve their knowledge and confidence around using supportive technology
- Enhance levels of care support for tenants, customers and service users
- Promote your organisations services and give them a degree of 'added value' opposed to your competitors
- Make better use of your existing staff and technology resources and improve the care service you provide
- Improve the quality of life and well-being of your customers and protect them and the staff who support them

Training sessions can be tailored to suit the specific needs of your staff. Primarily they are aimed at supporting and informing care workers, sheltered/extra care scheme managers, housing officers, health visitors, domiciliary care staff, occupational therapists, and any care professionals who have a direct contact with end users and their families.

Basic introductory training courses run for either a half or full day and Lifestyle Choices (Technology) will come to you. Full course materials will be provided, hands on sessions of examples of working technology will be included, and if required (at an additional cost) online follow-up mentoring and advice for staff can be arranged.

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Tel: 0750 230 3898 – www.lifestylechoicesat.co.uk – www.lifestylechoicesat.com – email: steveblcat@live.co.uk

Mobile phone for the tech-wary over 65s

This May, Swedish telecoms firm Doro will be introducing a mobile phone for technology-wary people over 65.

The PhoneEasy 622, a middle of the road 'feature phone', will have aids for older users such as amplified sounds, adjustable text size and a large, bright screen.

But pensioners will also be encouraged to try their hand at more up-to-the-minute activities such as recording and sharing video and looking-up weather forecasts.

Family and friends will be able

to help users by adjusting settings, adding contacts and uploading photos from their PCs to the cloud-based service that supports the PhoneEasy 622.

"We are encouraging people to take a journey with their technology as we fully appreciate the feature phone users of today could be the smartphone users of tomorrow," says Doro managing director Chris Millington. "Once again Doro has pushed design boundaries and built a new product proposition." ■

www.doro.co.uk



Proloquo2Go for literate users

Award winning Dutch software company AssistiveWare is preparing to release a spin-off from its Apple-based augmentative and alternative communication app Proloquo2Go.

The app for iPad, iPhone and iPod touch is basically a more advanced version of Proloquo2Go Typing View and is for literate users who can spell and type.

Features of Proloquo4Text include:

- Word and sentence prediction
- Speak as you type
- Word and sentence highlighting

- Multi-user support
- Sharing through iMessage, Mail, Twitter and Facebook.

The app will also be available in several languages (with automatic language detection) and AssistiveWare promises it will be considerably cheaper than Proloquo2Go, which sells at £130, including VAT.

The company told *Ability* that it plans to release Proloquo4Text "before the summer". ■

www.assistiveware.com/

Drive to dispel myths about dyslexia

The British Dyslexia Association (BDA) is sending a van equipped with examples of the equipment and IT tools available to help people cope with dyslexia on a national tour later this year.

The Dyslexia on the Move road show will visit major towns and cities in Wales and England. "The aim will be to disseminate information about dyslexia and dispel existing myths," says the BDA.

Mobile technology company Qualcomm has stumped up £37,000

to fund the awareness campaign.

"Many people know that dyslexia can cause difficulties with literacy. However, many people may not be aware that dyslexia can affect aspects of memory and organisational skills," says BDA Projects Officer Arran Smith.

The van starts in Cambridge and will be visiting Liverpool, Manchester, Leeds, Birmingham, Leicester, Swansea, Swindon, Bath and London. ■

www.bdadyslexia.org.uk/

Makeover for Victor Reader Stream player

HumanWare has introduced a smaller, wireless version of its Victor Reader Stream media player for people who are blind or visually impaired.

The new model is 28% smaller than its predecessor and features rounded corners to make it more comfortable to hold.

It also has Integrated Wi-Fi for automatic software updates and, in the future, book downloads.

The player features a louder speaker, improved text-to-speech from Acapela, better recording capabilities and faster USB transfers.

Humanware has also added 32-gigabyte capacity SD cards.

Users can buy a Softpak software upgrade that provides full stereo recordings, EPUB2 unprotected books, DOCX support, MP4 and iTunes M4A files, plus a built-in clock.

The Stream costs £255 with free delivery. Humanware is running a promotional draw that ends on March 1. ■

www.humanware.com/newStream

Adapter gives switch access to touch screens

RSL Steeper has launched an adapter that allows users to control Apple touch screen devices by pressing a single switch.

Using the Pererro adapter, users can scan through on screen selections to control iPod touch, iPhone and iPad devices and access applications on the devices including communications software and environmental control systems.

The Pererro by passes touch screen controls by interfacing with the Apple VoiceOver voice recognition system.

The adapter, which is about the size of a large postage stamp, plugs directly into an Apple device.

A switch can be plugged into the adapter via a standard 3.5mm minijack connection.

There are an estimated 2.5 million people in the western world unable to use touch screen technology due to conditions such as multiple sclerosis, amyotrophic lateral sclerosis, motor neurone disease, duchenne's and muscular dystrophy, according to RSL Steeper.

Pererro is a simple, compact

and light, plug and play adapter that powers directly from the iOS device, providing access to iOS on iPod touch, iPhone & iPad via Apple VoiceOver," says Dave Howson, Director of RSL Steeper's Assistive Technology division.

"It is designed to plug into the kind of switches that are widely available in the AT community and employed in many communication aids and environmental control devices."

The Pererro costs £150 plus VAT and £5 delivery. ■

<http://assistive-technology.co.uk/>

Website to aid search for aphasia software

The Tavistock Trust for Aphasia will be relaunching the Aphasia Software Finder website in the spring.

There will be over 100 packages of therapy software and apps for the

language disorder listed on the site. These will have been analysed by a professional specialist therapist, says the Trust.

The site includes general

software and apps in the English language that could support people with aphasia with their therapy and daily activities. ■

www.aphasiasoftwarefinder.org

Glasses alert deaf people to loud sounds

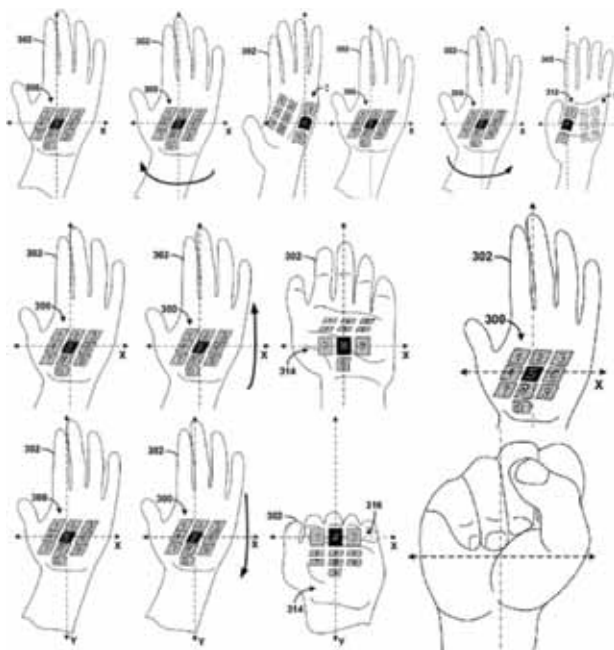
Korean scientists have built a pair of glasses that alerts deaf people to the whereabouts of loud sounds.

Researchers at the Korea Advanced Institute of Science and Technology (KAIST) have mounted an array of seven microphones on the frame of the glasses.

The microphones are connected to a laptop in a back pack that processes their signals and tells the wearer where sounds are coming from via LED displays in the frame.

The glasses can be set to alert a wearer only to sounds above a preset threshold level.

Other researchers, according to *New Scientist*, have applauded the engineering but



Google Glass users could have laser keyboard projected on their hands

question whether the advantages outweigh the cost and complexity of the kit.

Theoretically, alerts for deaf users could be part of Google Glass, which is expected to be on sale in 2014.

Meanwhile, Google has patented a system that flashes visual alerts when it hears sounds that could be important to the wearer.

The company is working on Project Glass, so-called augmented reality specs that contain a 1.3 cm display that might be used for surfing the web, taking photographs and navigating with electronic maps.

Google has also filed patents that describe a laser keyboard that could be projected onto the palm of a user's hand to allow them to operate the device.

Prototype Google Glasses have already been given to celebrities to try. ■

Switch on to technology

Robin Spinks explains why over 6,000 people responded to an RNIB campaign

Despite the many benefits that technology can bring to everyday life, and the positive progress made in ensuring that new gadgets take accessibility into account, there is still a significant section of society that doesn't use technology.

Older people and those with sight loss or other disabilities often face extra hurdles when it comes to using technology, but embracing modern gadgets like mobile phones and eBook readers can make everyday living easier.

How do we tackle this challenge of introducing people to technology and successfully persuading blind and partially sighted people of the benefits?

The Royal National Institute of Blind People (RNIB) ran a 'Switch on to technology' month in November last year with the aim of getting 1,000 blind and partially sighted people engaging with technology.

The campaign was shaped around four key themes: finding the right mobile phone for you; the benefits of getting online; choosing your computer; and using eBook readers and downloadable audio books.

Activities for the 2012 campaign included 55 technology events hosted in 23 locations across the UK, a series of five technology beginners' guides, which could be downloaded from the RNIB website or ordered in accessible formats, and four technology-themed radio programmes from RNIB's Insight Radio, which were also available as online podcasts and on audio CD.

The Technology Support Squad, a free national service that can set up and help people with sight loss use their technology, was also a popular element of the campaign last year, so RNIB promoted this service again to encourage people to make the most of their technology products with the support of our volunteers.

To engage those people who are new to technology, the regional events were designed for beginners and the five beginners' guides were made available via the

Helpline in large print, braille and audio formats, as well as online.

In order to engage those who are already online, we refreshed all online content and promoted our Switch on to technology newsletter, which provides the latest technology news for blind and partially sighted people throughout the year.

Happily, the campaign objective was vastly exceeded. The campaign directly engaged over 6,000 people and 1,128 blind and partially sighted people took part in an activity offline.

The regional technology events were a success, with 453 people attending the events and an additional 87 people attending unofficial Switch on themed events, such events that took place outside November 2012.

Social media also proved to be a popular way of getting involved, with 977 'likes' and 100 new 'likers' of RNIB.

Importantly, there was positive feedback from the people who got involved, including helpful suggestions as to which technology topics they would like RNIB to tackle next time.

Summing up why campaigns like this can make a real difference, Vicki Manly, who is registered blind and supports RNIB's Switch on to technology campaign said: "I never thought I would be able to use all the latest gadgets but now I really enjoy using them."

"Technology has made a big difference to my everyday life, being able to use my mobile phone to send emails and listen to the radio while I'm out and about is great, and my talking phone at home lets me know who is calling."

If you'd like to find out about mobile phones, computers, eBooks, downloadable audio books or getting online, order one of RNIB's beginners' guides.

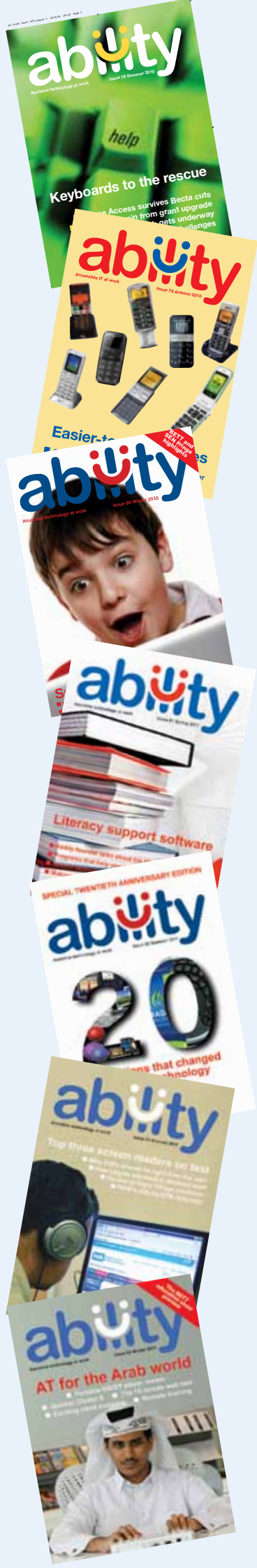
You can also order one of our 'Getting started with technology' podcasts. Call our Helpline on 0303 123 9999 or email helpline@rnib.org.uk. Alternatively, download a guide or listen online at www.rnib.org.uk/technology

RNIB's Technology Support Squad can provide advice over the phone or send a volunteer to help you at home. Call 0303 123 9999 or email helpline@rnib.org.uk ■

Robin Spinks is Principal Manager for Digital Accessibility at RNIB



The response to the campaign vastly exceeded expectations



Keep abreast of the latest developments in IT for disabled people: get *Ability* Magazine

Subscription rates for *Ability* magazine and monthly email newsletter 2013

A subscription to *Ability* now includes a monthly email newsletter that supplements the quarterly magazine with more up-to-date news of new products and trends in accessible and assistive technology.

For subscribers there are two options: a personal subscription and an institutional subscription.

1. The institutional subscription comprises five copies of each print edition of *Ability* magazine per year and a licence to distribute an ebook edition (PDF and HTML versions supplied) and a monthly email newsletter. The annual subscription fee is £175 (members of National Association of Disability Practitioners £157.50).
2. The personal subscription consists of either a print or ebook edition (PDF and HTML) and a monthly email newsletter. The annual subscription fee is £65 (members of National Association of Disability Practitioners £58.50).

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Diary of events

EUROPEAN KNOWLEDGE TREE GROUP 2013 MASTER CLASS

8–9 April

London School of Economics

The European Knowledge Tree Group (EKTG) brings together experts in independent living through a series of conferences, master classes and meetings. The London master class is on the theme of 'getting off the roundabout'. Large numbers of pilots and demonstrators have taken place, say the organisers, but they will be asking delegates "what must we do to stop this pilot roundabout and get into the mainstream?" The previous master class, held in London, brought together approximately 200 European experts with over 80 presentations, company pitches and demonstrations.

Fees: £250

Further information: <http://gotr.eventbrite.co.uk/>.

SIGHT VILLAGE SCOTLAND

16 April Grosvenor Hilton, Edinburgh;
17 April Marriott Hotel, Glasgow

These are premier European events showcasing technology, support and services for people who are blind or visually impaired, which attract leading suppliers of assistive technology for vision impaired people.

Fees: None

For further information: www.qac.ac.uk/sightvillage-scotland/home.htm

NAIDEX

30 April – 2 May

National Exhibition Centre, Birmingham

Wheelchair basketball ace, Ade Adepitan, will be opening Naidex National this year. Naidex is the UK's number one exhibition for the homecare, rehabilitation and disability market with over 300 exhibitors. On display will be communication aids and telecare systems from leading organisations including Action on Hearing Loss, Aidis Trust, BT, Doro and Smartbox.

Fees: None

For further information: Visit www.naidex.co.uk

COMMUNICATION MATTERS ROADSHOWS

1 May Belfast; 9 May Glasgow; 26 June Birmingham

Communication Matters Roadshows are a good opportunity to keep up-to-date with the latest advances in the important field of augmentative and alternative communication (AAC). The presenters are representatives from the UK's leading companies that manufacture or supply voice output communication aids, software, switches, symbol systems and more. At each Roadshow participants attend five sessions during the day. During each of the sessions, which last 40 minutes, the suppliers make parallel presentations and the participants

are free to choose which one they wish to attend. Each presentation is repeated in each session throughout the day.

Fees: None.

Further information: Email admin@communicationmatters.org.uk or visit www.communicationmatters.org.uk.

ASSOCIATION OF DYSLLEXIA SPECIALISTS IN HIGHER EDUCATION (ADSHE) ANNUAL CONFERENCE

30 May

Friends House, Euston Road, London

A day of workshops will focus on creative and innovative approaches to supporting students with specific learning difficulties in higher education. Sonocent will be demonstrating its Audio Notetaker software and Neil Quatrell of LexAble will be talking about dyslexia support.

Fees: £110 members; £130 non-members

For further information: Amanda Beckles at adshedyslexia@gmail.com or go to <http://adshe.org.uk/events/>

E-ACCESS 12

5 June

Westminster Conference Centre, London

In the digital age, it is vital for ethical, legal, commercial and social reasons that as many people as possible can access the internet, apps, computers and all digital services, including people of all abilities and ages. Now in its ninth year, the event is also co-hosted once more by the One Voice for Accessible ICT Coalition, the UK's leading umbrella body for organisations promoting access to technology by all. Speakers will include Ed Vaizey MP, Minister for Culture, Communications and Creative Industries; Simon Stevens, the leading Disability Consultant and Campaigner; and E.A. Draffan, Research Fellow, Web and Internet Science, University of Southampton.

Fees: Not known at press time

For further information: www.headstar.com

VISION UK 2013

11 June

Queen Elizabeth II Conference Centre, Westminster

The 2013 conference promises to be an exciting event with the launch of the refreshed UK Vision Strategy 2013-2018, which sets the direction for the whole of the sight loss and eye care sector. The one-day conference will include a series of workshops where delegates will have the opportunity to contribute to implementation plans for the refreshed strategy and hear from a range of experts in the public health and eye care sectors. Delegates will also be able to network at the pre-conference dinner on the evening of Monday 10 June.

Fees: Voluntary rate £102; non-voluntary £168.

For further information: www.vision2020uk.org.uk

M-ENABLING SUMMIT

16-17 June

Renaissance Arlington Capital View Hotel, Washington DC

The M-Enabling Summit aims to promote mobile accessible and assistive applications and services for senior citizens and people with disabilities. The conference will cover the latest operating systems, handsets and tablet-based technologies. The Summit, organized in cooperation with the Federal Communications Commission (FCC), encompasses a variety of topics from sectors including education, senior services, rehabilitation, travel and transportation, gaming, mobile e-commerce and emergency response. Leading solutions for physical, visual and speech impairments, hard of hearing, as well as learning and cognitive disabilities will be demonstrated.

Fees: \$525, academia, government and non-profits \$195

For further information: <http://m-enabling.com>

CHILD, YOUTH, FAMILY AND DISABILITY CONFERENCE

18-19 June

Manchester Metropolitan University

The aim of the conference is to provide a space for disabled children, young people, family members and allies (including practitioners) to share their ideas, knowledge and expertise and to celebrate their lives.

Fees: Free

For further information: go to <http://cyfd2013.eventbrite.com/>

NADP ANNUAL CONFERENCE 2013

27-28 June

Crewe Hall Hotel, Crewe

The road ahead for both disabled students and the staff who work with them is potentially a rocky one. Increased tuition fees, students being customers, government savings, the recession, re-organisations and debates about ensuring quality provision funded by DSA, amongst other matters, mean that disability professionals have to work hard to deliver professional, high quality and cost effective services. The NADP's annual conference will be examining the implications for members.

Fees: Full rate for members £470, non-members £510. Single days £175 or £220.

For further information: Call 01604 497933, email admin@nadp-uk.org or visit www.nadp-uk.org

MOBILITY ROADSHOW

27-29 June

Telford International Centre, Shropshire

Celebrating its 30th anniversary, the Mobility Roadshow is the showcase for a huge variety of products and services that aid an independent lifestyle. The show gives visitors the chance to see the latest vehicles, wheelchairs, powerchairs, scooters and cycles. In addition there are opportunities to join in sport, watch demonstrations and take part in activities for all the family.

Fees: Free

For further information: www.mobilityroadshow.co.uk/

A freelance future?

The Government should set disabled people up in business rather than paying employers to take them on or providing sheltered employment, says Kevin Carey

Well, if we couldn't boost the employment of people with disabilities during the boom, what are we going to do now or, rather, what should we do? If we run true to form, we will opt for more of the same, relying on the justice of our cause and the proposition that people should be judged according to their abilities, not their disabilities.

The first problem is that the right – if it is a right – of people with disabilities to gainful and rewarding employment is, as all rights are, in competition with other rights; to deny this leads to windy, self-serving and ultimately pointless rhetoric.

The 'right' of UK or EU citizens to gainful employment conflicts with a global 'right' of the free movement of labour and the 'right' of anybody to do their best for their family; the UK 'right' is in competition with the EU's policy on the free movement of labour.

Secondly, there is the right of shareholders to a return on their capital, which many people regard as somehow immoral; but, then, where would our pension pots be without it? Thirdly, and crucially, that return increasingly relies on moving capital to take advantage of cheap labour and, fourthly, on automation and self-service.

Finally, the Government doesn't care and isn't going to do anything about it. There may be some creaming off by payment-by-results contractors but that's it, not just for now but into the future. As I say, if we couldn't do it in the boom, we're not going to do it during a sustained period of economic flat-lining.

So, to sum up: there is a global market in skills and global

competition for capital increasingly based on cheap labour, automation and self-service; and the UK Government is not going to intervene on our behalf.

This combination of pressures inevitably squeezes the space where people with disabilities do best, doing jobs that cannot be automated but rely on a limited number of options



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

(too many options induces a speed of execution disadvantage). This scenario sounds bad, but only if you consider employment as processing material or data feeds to provide a result such as a product or a piece of advice.

Conversely, creativity is also largely a matter of creatively designing and skilfully executing variations on a theme. If you think about it, cooking, fashion, soap opera, games, light fiction, toys, pop music, home ware, photography and all other forms of popular culture and lifestyle are built on this limited but productive form of creativity.

This is not the whole answer, of

course, but we do need to analyse the labour market in terms not only of processing but also creating and designing to see where there are opportunities which are not immediately susceptible to capital flight, the global skills market or automation.

It seems obvious to me that this state of affairs cries out for a small and medium-sized enterprise (SME) strategy based on social investment, which in turn calls for a shift from investing in lobbying and persuasion to direct investment in jobs.

If it costs, say, £10,000 to place a person with a major corporate or government department – subject respectively to commercial risks and down-sizing – what could we get for the same money through direct investment in the person in the context of an SME or, alternatively, operating as a portfolio freelance with support from a commission-paid agent.

This leaves people who, for whatever combination of reasons, lack the capacity to create and/or to work in an intensive SME or freelance environment. Here the question is whether the concentration on employment as the way to live a rewarding life is the same for everyone.

Globalisation and the ideology of integration closed sheltered facilities and they aren't going to re-open, so should we not accept that it would be better to invest in the lives of people who cannot work competitively rather than investing it in uneconomic enterprises, or would we be guilty of 'farming' disability?

These are tough issues for tough times; and they will not go away. ■

Queen Alexandra College

ADMISSION FREE

Pre-registration recommended
www.qacsightvillage.org.uk

sight village

2013

**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

unmissable for

end users employers professionals public sector

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UK's leading exhibitions of technology,
equipment and support services for
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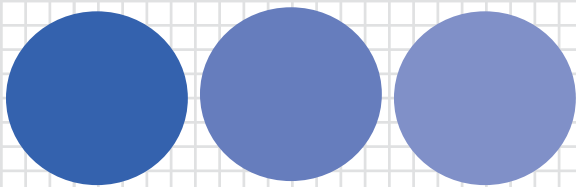


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