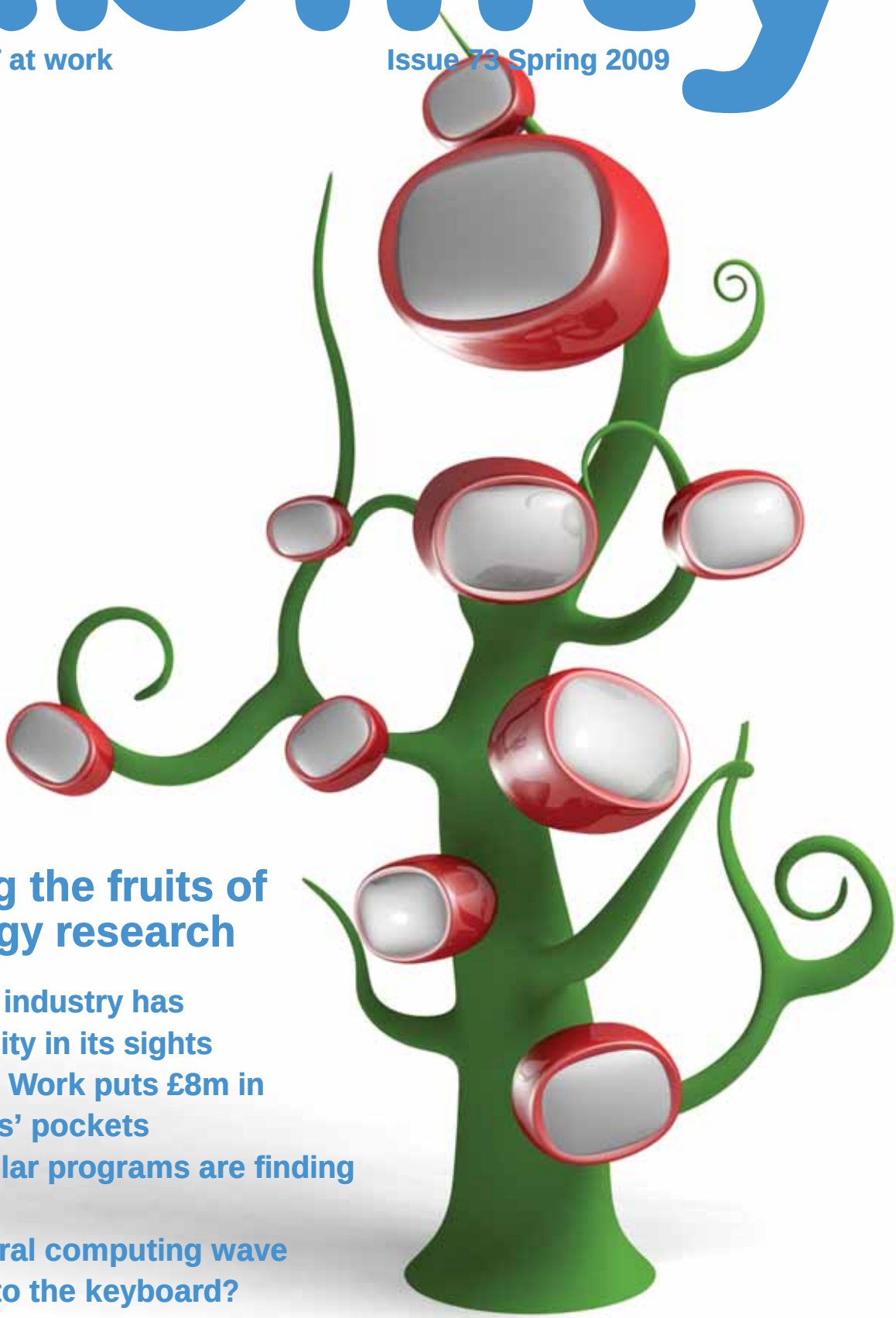
ability

Accessible IT at work

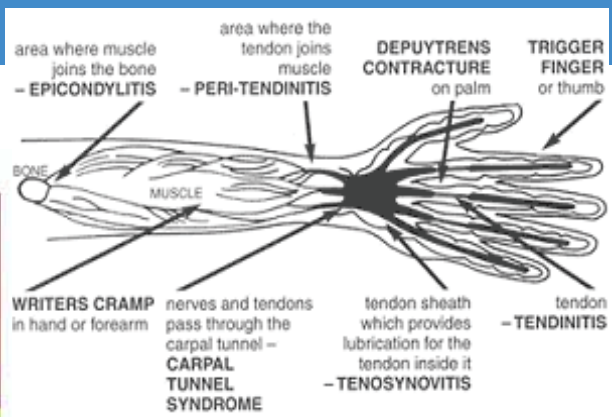
Issue 73 Spring 2009

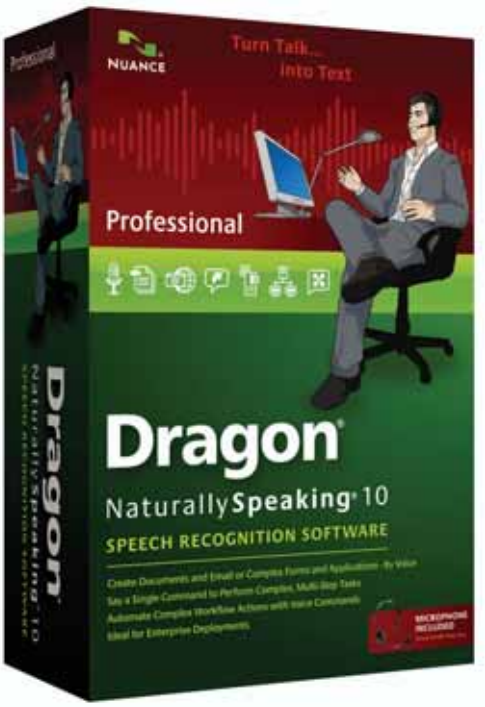


Gathering the fruits of technology research

- Digital TV industry has accessibility in its sights
- Access to Work puts £8m in employees' pockets
- Why popular programs are finding a voice
- Will gestural computing wave goodbye to the keyboard?

RSI, Dyslexia, MS, Visually Impaired Computers 'used to be a real pain...'





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Ability is grateful for the support of the following sponsors:

Extra funds will boost technology use, says John Lamb

Shot in the arm for office workers

The news that Access to Work is to get £8m of extra funding this year will delight many fans of a scheme designed to encourage disabled people to either remain in work or to return to paid employment.

The prospect of a further doubling of funds between now and the financial year that ends in 2014 will cheer those involved in assessing people's needs, supplying technology and training workers in how to use it.

It has long been a complaint that while school and university students have comparatively easy access to accessible technology, adults who have finished education are largely left to their own devices.

However, welcome as the extra money undoubtedly is, cash is only part of getting Access to Work to deliver. Users have long complained that not enough effort is made to draw employers' attention to the scheme: it is too much of a well kept secret.

That may explain why some organisations refuse to accept that they should pay for extra equipment even after it has been recommended by an Access to Work assessor.

There is also confusion about who the ultimate beneficiary is. While employees apply for funds, the money is paid to employers, who also get to keep the hardware and software for which grants are made available.

Fair enough you may think in that employers usually have to contribute to these reasonable adjustments, but that leaves job changers, in theory, having to start all over again.

And there is some question about the assessment process. Last year the job of assessing claimants for Access to Work was outsourced to private companies and big charities such as RNIB and Leonard Cheshire.

Ability has heard a trickle of moans from suppliers concerned about conflicts of interest and lack of appropriate assessment skills.

There was further cheering news about the prospects for assistive technology last month with the establishment of ATcare, an organisation set up to make sure that more disabled people benefit from research, much of it government funded.

At present less than a quarter of projects end up with products that a disabled person can go out and buy. There was plenty of evidence of innovative ideas on display at the opening of ATcare. Now all we need is the capital, commercial nouse and marketing skills to bring them to users.

Finally, a thank you to one group of disabled workers who certainly have no trouble getting the technology they need for their jobs: web and software accessibility testers working for the Shaw Trust. They recently spent a day putting *Ability*'s website through its paces. We look forward to implementing their recommendations soon.

Credit cards create a barrier to access

I work in an NHS in-patient psychiatric rehab unit and operate in house training for patients. We are a closed UKOnline centre (not open to the public) and offer patient training through UKOnline and are also an Oxford Cambridge and RSA Examinations (OCR) approved centre.

Obviously I am very keen on helping long term psychiatric patients to embrace new technology. Many of our patients have missed out on chunks of their education and often the qualifications they get with me are the first formal ones they have been awarded.

We often find that many everyday tasks, such as setting up a mobile phone or downloading music, require quite a bit of input to navigate through some of the various sites.

Often, as hospital in-patients usually have very basic bank accounts, they can find it difficult to take advantage of offers as they do not have credit cards, their address is a shared hospital unit and they may only have cashpoint cards.

This is only one example of accessibility being denied (usually unwittingly). Even such simple things as opening a bank account or getting a passport when you have been in a variety of hospitals around the country so have no referees who have known you for long enough, can be very stressful.

Linda Woolverton
Oak House Training

Looking beyond web guidelines

In my opinion there is a commonly misplaced emphasis on sites being accessible by blind or visually impaired people, this is only part of a much bigger picture.

They need to be usable for everyone, which means you need to consider your audience. People like to have the accessible badge and the government has made things worse by introducing the requirement to be level 1 WAI compliant – which really is nonsense.

For example, consider your target audience as people with mental difficulties. They need a site that engages them by perhaps making things drag and droppable, maybe with flashing/moving content, has big fonts and very simple content with lots of imagery and little text.

Clearly this flies right in the face of a site for people suffering from severe epilepsy, or visual impairment, or cerebral palsy.

Even the WAI guidelines themselves are contradictory. For example, one element of level 2 is that you should not have the same content or words on the page linking to different places or different content on the page linking to the same place.

However, our research from working groups is that people need as many ways as possible to get to the same thing on one page since different people navigate in different ways.

In this scenario, so much of accessibility is not even about people who have a disability – it's about making your content easy for Joe Bloggs to find.

The bottom line for every organisation really should be: who is my audience, is my site easy for them to use and does it do its job well?

The WAI guidelines are a good starting point but should not be a rule book. In fact, there is even the concept of 'self certification', which basically means I've done all the WAI checks – I fail but don't care because WAI doesn't really understand what my site is for and I think it's fine for what it's used for.

Mark Smith
Chief Executive
Nemisys

HAVE YOUR SAY

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

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

Project Possibility

In the article on Project Possibility that appeared in the last issue of *Ability* (issue 72, winter 2009) it seems that I gave the wrong web address. It should have been www.projectpossibility.org. Would it be possible to make a correction in the next issue or put an errata on the website?

Steve Lee, Open Source Assistive Technology Software and Accessibility

Amplicom mobile phone

This mobile phone has been designed specifically for people who have either a sight or hearing problem. The keypad has large white numbers on black buttons which light up when pressed and the bright screen displays black numbers on a white background. For people with a hearing problem there is an integrated induction coil making it fully compatible with a hearing aid. Finally, its extra loud speaker ensures you will hear the phone ringing and be able to hear the person talking.

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Government injects £8m into Access to Work

The Government is to pump an extra £8 million this year into the Access to Work scheme which funds technology for disabled workers.

In the longer term the Government plans to double the budget for Access to Work – which provides IT, travel and support to disabled workers from £69m to £138m by 2014.

"This extra funding ... forms part of the £2 billion package we are investing to give people real help in these tough times," said minister for disabled people Jonathan Shaw.

The funds would ensure that disabled people who are in employment or have a firm job offer do not miss out as a result of the economic climate, he added.

Dee Blick: She claimed £2,000 but says Access to Work needs marketing

Employers' Forum on Disability welcomed the boost to Access to Work, which is run by Jobcentre Plus.

"Many of our members tell us that funding is one of many factors that contribute to a positive experience of using Access to Work," said chief executive Susan Scott-Parker.

"In particular, a more consistent approach is needed which meets the needs of both employees and employers.

"Despite the obvious value of Access to Work, there are still a number of employers who are not aware of the scheme and the benefits it offers."

Dee Blick, who runs a marketing business and has an upper limb disorder, used Access to Work to reclaim £2,000 of the money she spent on speech recognition software, a chair and training from Hands-Free Computing.

"Access to Work is the best kept secret," she told *Ability*. "I have no criticisms of the service or people, but unless you are in the know you just don't hear about it. They should do some marketing."

Recent changes to Access to Work have seen contracts to do technical assessments outsourced and the public sector forbidden for claiming for the benefit.

Some observers say outsourcing has led to assessments being carried out by people who lack relevant knowledge.

The RNIB and Leonard Cheshire do all dyslexia assessments in Scotland, but they are not specialists in this area.

Another problem, according to Dr Sanderson, lead consultant at iAnsyst, is that employees do not have a right to take systems with them when they leave a job. Although they make the original application, their employers own equipment and software.

However, Sanderson is convinced that Access to Work has made a big difference by highlighting disability and reducing the cost of assistance. "It is the best thing the government has done for disabled people, bar the Disability Discrimination Act." ■

Briefs

Whippy wins award

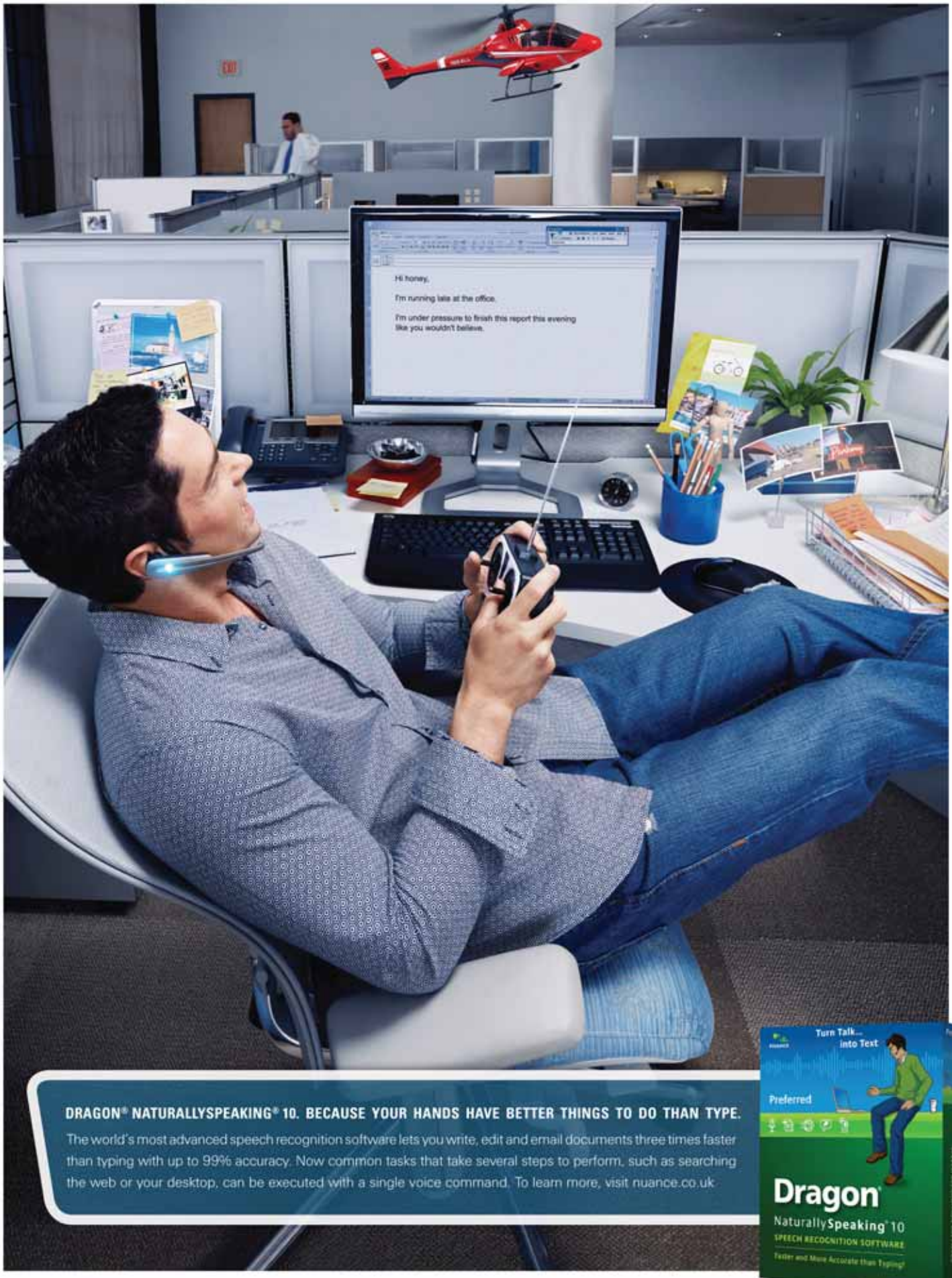
Graeme Whippy, senior manager of IT accessibility at Lloyds TSB has been honoured for his 'outstanding contribution to the financial services industry by an individual' in the well-respected Financial Sector Technology Awards. "Winning the award means that when I have meetings, it adds credibility to what I am doing," Whippy told ***Ability***. Through his efforts Lloyds TSB has become an exemplar in accessibility and Whippy has influenced accessibility throughout the industry.

'Cruel fiction' refuted

Claims by MP Graham Stringer that dyslexia is a "cruel fiction" have been dismissed by dyslexia activists. "Once again dyslexia seems to be making the headlines for all the wrong reasons. It is frustrating that the focus should be on whether dyslexia exists or not, when there is so much evidence to support that it does," said Shirley Cramer, chief executive officer of Dyslexia Action.

Business advice

The IT Livery Company is developing a free mentoring scheme to help disabled entrepreneurs. Would-be business owners will team up with experienced mentors to discuss the hurdles they face and gain practical advice on how to address key issues. As information technology becomes more accessible and inexpensive, it is becoming much easier for entrepreneurs the world over to compete on an even playing field, says the Livery Company. The organisation is running a survey on mentoring at **http://www.surveymonkey.com/s.aspx?sm=3wM918X_2fzppt5QRqiQ9cNg_3d_3d** which includes information on how to apply for a mentor.



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ATcare to speed up flow of products

A lack of commercial knowledge is preventing assistive technology products from moving off the drawing board and onto the market, according to a recent survey.

Less than a quarter of 362 assistive technology projects under research between 2004 and 2007 resulted in products reaching the market, says a study by the ATcare Design and Development Centre.

The centre has been set up, backed by a grant of £2.35 million from the London Development Agency, to work with users, manufacturers and health professionals to increase the flow of commercial products.

"Most of us will be looking for the independence assistive technology can provide at some point in our lives," said ATcare chief executive Christine Asbury at the opening of the Centre in February.

"We cannot let millions of people down in this way and must shorten the journey to market for assistive technology products. Lives can be transformed through technology, and I am very excited that ATcare will radically improve the opportunities for assistive technology users and product designers."

Christine Asbury: Can't let people down

Assistive technology products and services are needed to meet the needs of an ageing population in the UK, according to ATcare.

By 2025 one in five people will be over 65 and over six million older people will be suffering from a debilitating long-term illness requiring assistance to live.

Assistive technology, argues ATcare, can also meet the growing expectations for independence for disabled people – a group that makes up 10% of the UK working population and contributes a disposable income of almost £50 billion to the UK economy.

ATcare's Design and Development Centre will provide help and support in design and product development; consumer advice; regulatory advice and approval; product business case development; user and market assessment; care pathways; and distribution channels.

www.atcare.co.uk

Millions miss out on digital economy says study

Millions of people are in danger of being excluded from the benefits of digital information and communications technologies, according to research released by the Inclusive Digital Economy Network.

The study, presented at a conference at City University London, focuses on the challenges for including older and disabled people within the digital economy and identified accessibility, affordability, usability and the socio-technical environment as the key issues that influence digital inclusion.

Many people, the research concludes, particularly those who are older, disabled or part of a disadvantaged group, will not benefit from advances in technology because they are unable to access or use the systems and services offered. These include commercial transactions and remotely offered services such as wireless internet.

The Network suggests that, although the digital economy could potentially improve services for the general public, the government needs to develop policies to make the digital economy more inclusive, particularly for older and disabled people, by addressing the key challenges and working with organisations, such as charities, to raise awareness of it.

Consultancy appeals for web testers

Accessibility consultancy System Concepts is looking for adults and children to test how easy web sites and electronic products are to use.

The company is looking for people who use the web in alternative ways from the following groups:

- Visually impaired (mild to severe)
- Hearing impaired (British Sign Language – BSL – as a first language and those who do not use BSL)
- Mobility impairments which mean that testers use non-standard equipment to access the internet and/or adjust their computer settings
- Cognitive/learning difficulties

The sessions usually last about 90 minutes for which Systems Concepts pays £75 plus help with travel costs.

The evaluations are done in central London. But testers who need special equipment to use the computer or have an impairment that makes it difficult to travel can work from home.

Recent research has helped mobile phone companies, on-line shops and insurance websites provide a better service to their customers.

To register call 020 7240 3388 and ask for Mickela, or email her on Mickela@system-concepts.com.

www.system-concepts.com

Will councils take the plunge on telecare?

Local authorities are under pressure to invest in telecare systems that save money on the care of learning disabled people and enable them to live independently.

Earlier this year the government unveiled a three year strategy on learning disabilities called Valuing People Now, which calls for more choices for learning disabled people.

And this April responsibility for learning disabled people and the funds to pay for their care were transferred from the NHS to local authorities.

Some councils have reacted swiftly to their new responsibilities. North Yorkshire County Council is switching nearly half its £16m care budget for this year into assistive technology in a bid to cut costs and improve the quality of life for sick and disabled people.

"We are going to purchase 50% less residential care," says Seamus Breen, strategic commissioner for North Yorkshire. "The money – we will be spending £7.9m this year – will be going on assistive technology."

Breen was speaking at the Home Farm Trust's Person Centred Technology Conference on assistive technology and telecare for people with learning disabilities.

Firms that provide care to the county council must consider technology in their proposals. "We expect to make £12m of efficiencies over the next two years. That's why we are investing in person centred technology," explains Breen.

The biggest challenge, he says, is in changing the mindset, training and culture in care services.

Few local authorities have gone as far as North Yorkshire. "Only a handful are doing what North Yorkshire is doing: sizeable funds are not going into telecare," points out Kevin Alderson, public sector policy director at telecare supplier Tunstall.

Alderson acknowledges that despite industry efforts to create joint standards through projects such as the Continua Alliance, there is a need for manufacturers to work together more closely.

"People are not always spending money in the best possible way," says Anne Williams, director of learning disability services at the NHS. "There are many examples of where support has been redesigned and costs less."

Williams believes there needs to be greater awareness of technology among support staff.

Gilly Aspey and her learning disabled son James told delegates to the conference how he used technology to travel, study, work and live safely in his own home.

On public transport, James carries a personal digital assistant to communicate with his family, while flood, smoke and heat sensors have been installed in James' home to alert carers if anything should go wrong.

James is also prompted by his technology to do things at the right time and he can control who comes through his front door.

"The knowledge that systems allow James to live independently has changed our lives," says his mother.

Stories such as the Aspeys' are crucial in helping councillors to understand the importance of technology in allowing authorities to support more people with less money, Breen told his audience.

Job sites tackle unemployment

With the economic downturn in full flow, disabled people are struggling more than ever to compete in a floundering job market. More than half of all disabled people of working age do not have a job.

Leonard Cheshire Disability has launched a jobs website to tackle the issue.

Suitability, a partnership between Leonard Cheshire Disability, the Employers' Forum on Disability and Jobsgopublic, is an online job brokerage for registered jobseekers, employers and mentors.

Disabled jobseekers can contact personal advisors, connect with people with similar needs and goals, receive job alerts by SMS and access the Suitability CV Builder.

Employers can post vacancies online for free, recruit and hire staff, reach other companies through the Suitability Forum and sign up to virtual careers fairs.

Jane Fletcher, Leonard Cheshire Disability's innovations director, said: "Disabled people are already far less likely to be in work than non disabled people. With the job market in free fall, they will face even more barriers to finding work.

"Many disabled people do want to find a job, but often face the serious challenge of changing people's perceptions of who they are and what they can do."

www.lcdisability.org/suitability

Jane Fletcher: Even more barriers to disabled people finding work

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Shaw Trust puts magazine to the test

Ability joins a group of disabled testers who are giving our website the once over

Shaw Trust's premises in Neath on the outskirts of Swansea are literally built on the area's industrial past. The neat, redbrick offices are in a business park that was once the site of an oil refinery.

Now the centre is visited by some of the brightest brains in the latest wave of industrialisation as they submit their digital creations to the scrutiny of Shaw Trust's teams of disabled testers.

Hot shots from organisations such as the Audit Commission, ICI, Oracle, SAP and Sky have made the journey west to test their software and websites' accessibility.

Waiting for them are 16 people standing in for the millions of disabled users who may try to access these products.

Armed with appropriate assistive software including Dragon NaturallySpeaking, JAWS, SuperNova, Widget and Zoomtext they set about their task with good humour and determination.

Shaw Trust runs its own accreditation scheme which involves a four week examination involving automatic tests and manual auditing. However *Ability*'s website was subjected to a day long assessment.

By the time *Ability* arrives in Neath the testing is in full swing and the editor, whose picture is on the site, is greeted with whoops of recognition.

"Some people have an attitude problem when they come here they don't realise the barriers that exist. They go away the wiser," observes Kevin James, a keyboard only user who is ploughing through the magazine's pages following a script.

Christian Perera (l) and Kevin James

Gavin Evans

Steve Lloyd

Christian Perera sitting opposite him uses voice activated software to negotiate the site. "When we can see a site has been improved we can think 'yes we had a hand in that'."

Next door, Steve Lloyd, whose picture appears on much of Shaw Trust's publicity material, is literally wrestling with an oversize Maltron keyboard and keyguard.

Using a two switch system Steve, who has cerebral palsy, tabs through the site commenting on the lack of anchor points to help scroll down a page and the absence of highlighted links to indicate where he is on a page.

Downstairs are four more members of the team: Malcolm Stephens, a technical support officer, Jaime Purvis, a screenreader user, Ann Walton who monitors readability and Maxine Bignell who takes care of audio and video.

Although more senior members of the team may have a knowledge of web development, it is not essential. What is really important says Gavin Evans, the centre's web accessibility services manager, is to make sure a site is accessible to all.

"It's good that developers seem more aware of accessibility," he says. "They are getting better and that must be through education in the mainstream."

Briefs

Digital champion

Fairness and access to all is one of five objectives for a programme to improve Britain's use of digital technology recommended in a report called Digital Britain. The report also calls for the appointment of a digital inclusion champion and an expert taskforce to ensure that government agencies work together. The champion is expected to be appointed in late spring.

www.culture.gov.uk

Survey with attitude

Research company Bloor is conducting a survey on attitudes and plans for accessiblity. The results will be presented at the e-Access '09 conference on April 23 at Olympia, London.

The results will enable organsiations, vendors and Bloor Research to make more informed decisions about accessibility.

To take part in the survey go to **www.it-director.com/business/compliance/content.php?cid=11175**

Screen credit

A 17-year-old disabled entrepreneur has won an Enterprising Young Brit Award for a website that helps deaf and vision impaired cinema goers find screenings of films they want to go to near them. Dean Rhodes Brandon runs the website Your Cinema, which is credited with changing the attitudes of the film industry to accessible cinema. Brandon received his award from the Chancellor of the Exchequer, Alistair Darling.

www.yourlocalcinema.com

Waving goodbye to the keyboard

Technology based on gestural computing involving interfaces that rely on body movements and facial recognition may make using IT easier and more enjoyable for many disabled people.

Controlling computers via a keyboard and mouse has been the dominant style since the graphical user interface was introduced 30 years ago.

Now advances in computing power are enabling the emergence of alternatives based on gestures, movement and facial recognition.

Over the past three years the Nintendo Wii and Apple iPhone have persuaded users that gestural computing works.

Since then other industry giants such as Microsoft and Intel have also introduced gestural interfaces, while consumer electronics companies including Sony, Panasonic and NEC have demonstrated applications based on recognizing movements.

Cameras that can identify people's faces and act on the information, eye tracking technology and virtual people or avatars are all being deployed to sidestep conventional button pushing methods of interacting with systems.

A company called Emotiv Systems has even demonstrated a device that picks up human brain activity to control the facial expressions of an avatar. The system interprets human movement without the need for any physical device at all.

When Bill Gates, founder of Microsoft, launched his company's Surface interface last year, he forecast "tens of millions" of users would employ an interface like Surface within the next few years.

"Gestural interfaces appear likely to become firmly established in consumer entertainment devices and to seriously challenge the traditional keyboard/mouse as the primary user interface control paradigm for PCs during the next five years, although the current paradigm will remain for a considerable length of time," agrees Stephen Prentice from research firm Gartner Group.

However, Prentice warns that alternative designs such as the Maltron keyboard, projected keyboards and voice recognition have yet to eclipse the conventional tactile keyboard.

That has not deterred Microsoft from introducing its Surface computer to the UK in March. The £8,500 table top device uses infra-red photography to detect the presence of a user's finger and track it.

Using a system of tagged counters with attached properties, the Surface is also able to recognize objects that are placed on it and allow them to interact with other virtual objects.

Microsoft Surface promises to end button pushing

One of the features of the Surface is the way in which it blurs the distinctions between physical and virtual objects. For instance it is possible to create a virtual bowling game, where a player slides a puck across the surface that crashes into virtual bowling pins.

Such functionality opens the way for users to access applications via tagged ID cards, or for devices to be recognised and then to interact with software such as cameras or mp3 players.

Applications to date have mostly been in the travel and leisure industries allowing hotel guests, for instance, to plan itineraries and book tickets.

However the interface is particularly useful for disabled users because it there is no transfer of attention between multiple input and output devices, no hand/eye co-ordination issues and no need to learn complex file and folder rules. Surface allows the user to directly touch data and manipulate it.

David Banes, development director of IT charity AbilityNet, demonstrated the Surface to enthusiastic crowds at the recent BETT educational show.

"Surface is about interaction by groups," he says. "One of the things that it offers is the opportunity to use technology to stimulate communication and conversation between pupils.

"At its most basic, Surface is a shared experience that might encourage the growth of awareness of others amongst pupils with very profound learning disabilities.

"For instance, we explored a virtual pond where hands create splashes and ripples. When in a group, one person's actions interact with those of another to create waves and effects.

"Social computing is at the heart of next generation technologies, it's nothing new, you can see it in the success of YouTube, Xbox Live and World of Warcraft."

Banes believes there is a clear appetite for gestural computing in schools and he says the next step is for teachers and users to understand the features and talk to developers to shape evolving applications.

BCS sets up assistive technology group

The British Computer Society is setting up a new Assistive Technology Specialist Group (ATSG) to promote assistive technology (AT).

The ATSG is intended to act as a forum for professionals, advocates and users working with AT. It is actively looking for new members.

An off-shoot from the BCS Disability Group, which disbanded last year, the ATSG will be formally launched in July at the Sight Village exhibition in Birmingham.

"Assistive Technology is gradually gaining ground in education and public spaces," says chair of the group Dr Alasdair King. "There is increased recognition of AT needs in modern software and hardware, as demonstrated by the new focus on web accessibility.

"New possibilities are being opened up by cheap, powerful and ubiquitous systems, such as always-connected handheld devices. This means we need a professional organisation for technologists in the UK."

The ATSG, says Dr King, aims to provide:

- A confidential place to meet users and practitioners and discuss issues between professionals.
- A place to find out about AT from the professional and technical perspective and how things are done, or should be done.
- Somewhere members can find practitioners and users speaking to each other as equals.

However, the group will not develop AT products or help users with their systems directly.

Anyone interested in joining ATSG can find out more at www.bcs.org/groups/atsg, or from Dr King at Alasdair.king@bcs.org.uk, telephone 07983 244 131.

A tribute to Andy Taylor

Andy Taylor, founder of assessment company Access Made Easy, and a respected campaigner for the rights of disabled people, died in February.

Andy, who was totally blind, employed a majority of disabled workers in his company which did assessments for the Access to Work scheme. He had worked as an employment advisor and trainer for JobCentre Plus.

He also campaigned on behalf of various charitable organisations and made many presentations before the House of Lords on the needs and rights of disabled people.

Andy was particularly angry at the waste of talent because blind people did not have access to technology.

More than 150 people attended his funeral. "While Andy devoted the majority of his energy to improving the world around him, he did it with an incredible sense of humour, an enthusiastic and infectious style, and the firm understanding that action always meant more than words," said Maren Moon of Tech Ready.

"Mourners at Andy's funeral talked of Andy's priority of always finding the time to help those around him – regardless of the time of day or the geographical location.

"If there was a means for Andy to provide a positive difference, then he simply did whatever he could whenever he could."

Friends have requested that memorial contributions be made to UCanDoIT, the charity that provides computer training for disabled people.

www.ucandoit.org.uk

Tobii is on track with embedded eye gaze system

Tobii Technology has developed an embedded eye tracking system that can be integrated into a range of different applications.

Eye tracking is a technology that tells a computer where a person is looking by shining an infra red light at their pupils and determining their position from the amount of light that is reflected.

Eye gaze is more widely available

Over the past year eye tracking has been widely adopted by communication aids companies to help people who cannot speak or use a keyboard to control a computer.

Tobii says that companies that have been waiting to add eye tracking capabilities to their products can now cut their investment costs and development time to a minimum.

Eye tracking components can also be incorporated into gaming machines, medical instruments, vehicles, market research set-top boxes and 3D displays, says Tobii.

"Every day, thousands of people with cerebral palsy, multiple sclerosis, ALS and other disabilities use Tobii eye controlled devices to communicate without using their voices or hands," says the company.

www.tobii.com

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Where's it AT?

Pat Sweet reports on groundbreaking developments in assistive techology that may transform the lives of disabled people

According to healthcare policy unit the King's Fund, the official definition of 'assistive technology' is 'any product or service designed to enable independence for disabled and older people'.

At one end of the spectrum that includes everyday items such as glasses, walking sticks or big-button telephone handsets, which most people take for granted.

But the range of assistive technology (AT) now being developed is much broader than this, as a recent event dedicated to the latest research in this area demonstrated.

RAATE (Recent Advances in Assistive Technology and Engineering) is the UK's only conference specifically dedicated to showcasing good practice, new designs and innovative developments in this field.

Last year's event, held in December at Coventry University's pioneering Health Design & Technology Institute (HDTI), attracted a large audience of academic researchers, healthcare professionals and rehabilitation experts for more than 30 presentations on different aspects of AT.

Researchers at the University of Stirling, for instance, are developing a new computer system designed to offer prompts for people who find it hard to learn and carry out activities that need to be done in a specific way.

Cognitive impairments

Many people with cognitive impairments such as those caused by brain trauma, dementia or learning disabilities, struggle to remember the steps involved in familiar tasks and have difficulty learning new tasks. They also have difficulties planning and correctly sequencing every day tasks and dealing with problems arising during a routine task.

Such difficulties can be extremely disabling and necessitate a great deal of formal and informal support from family, friends and healthcare professionals. Using AT to help keep people 'on task' is a way of increasing their independence.

The researchers have been working with a group of people who have had a limb amputated and need to learn how to put on their prosthetic leg correctly and safely. Most are in their sixties or older and have lost a leg because of vascular problems that may have affected their cognition, making it harder to learn and remember new instructions in the correct order.

Initial attempts using visual prompts proved unsuccessful, as people got distracted and lost their way in the process. Now the research team has developed special software, which is used in conjunction with speech recognition software on a standard laptop to produce voice prompts.

This software guides the user through each step of putting on the prosthetic limb, and checks that each has been achieved before moving on. Of the group of eight who have trialled the system so far, the new software has significantly reduced safety-critical errors for six of them.

Participants in the study reported that compared with learning the necessary actions under the guidance of a physiotherapist, they particularly liked the fact that they no longer felt 'observed' or 'nagged' as they learnt new instructions.

The researchers are now evaluating other settings where the system could be used, such as helping someone with dementia prepare a simple meal in their own kitchen.

Difficulty in learning how to behave appropriately, this time in social situations, can be an issue for children with autism. Specialists in robotics at the University of Hertfordshire have built a robot that looks like a toy dog and which can be used for non-directed play therapy. Six children at school were given 10 sessions playing with the robot dog, which was programmed to give the children cues by, for example, barking or wagging its tail.

Every child who took part in this research shows progress in social and co-operative play, including one who invented a biting game with the robot dog. Such imaginative play can be a hard

Older drivers are the subject of research at the University of the West of England

skill for children with autism to master.

Children with complex communication needs, on the other hand, need help in telling others about what is going on in their lives. Many use communication aids, but most speech generating devices are limited to short, pre-stored sentences that are input by someone else (usually a relative or teacher), or demand considerable time and effort to produce individual utterances.

Research at the University of Dundee is testing out ways in which non-verbal children can have opportunities to create their own stories about their day at school.

A team is developing a computer tool that produces a draft story based on knowledge of the pupil's planned daily activities (eg by using the school timetable to identify swimming sessions) and on data acquired from sensors placed around the school (eg tracking a visit to the library).

An editing and narration tool allows children to turn the story into something that is their own work, rather than a computer output.

Maintaining existing skills

As well as supporting new skills, AT has a role to play in helping people maintain existing skills as their physical abilities decline. Researchers at the University of the West of England have been investigating older people's needs while driving. Their work has identified areas where older drivers tend to experience problems, such as maintaining a consistent speed.

While professionals, including car designers, felt that the solution was to use technology to take over part of the driving task, older people themselves indicated they wanted technology to provide additional feedback to supplement their own abilities.

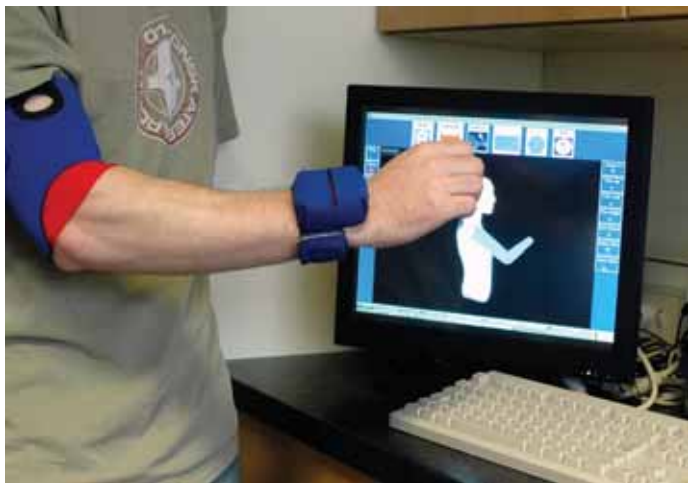
For example, a system that uses the global positioning system (GPS) to track a car's position and identify approaching signs, and then shows this information on a see-through display on the windscreen.

Another suggestion is to use GPS to monitor a car's speed and to develop a system that offers auditory warnings, such as a short, non-distracting beep, when a vehicle approaches or exceeds the local speed limit.

One of the key areas for AT in the coming decade will be in the whole sphere of rehabilitation. Current statistics show that the proportion of older people is set to increase dramatically over the next few years – the number of people aged 60 and over as a proportion of the global population will double from 11% in 2006 to 22% by 2050.

As people age, so they are also more likely to develop disabilities or chronic conditions that can adversely affect their quality of life. Stroke is a particularly disabling condition for people over 60, many of whom can be left with significant muscle weakness as a result.

Traditional treatment includes specially prescribed exercises designed to help improve functionality in arms or legs, but many people either find it hard to remember what they need to do, or lose the motivation to keep up with the exercises.



Smart 2 helps people excercise more effectively

Researchers at Sheffield Hallam University are tackling this problem with a system called Smart 2 that involves attaching sensors to people's bodies which are connected to a laptop with an in-built program.

At the beginning of an exercise session, people view a video and perform the necessary exercises, which are then monitored so they are given feedback by the system and encouraged to self correct. The research is examining whether this kind of regular response to patients' efforts encourages greater activity.

A University of Ulster team has gone one stage further and is piloting the use of brain/computer interface technology to help people with stroke. Participants in the trial wore a cap that detected brain signals. They spent 30 minutes in physical exercise practice followed by 30 minutes of mental practice in which the necessary exercises were visualised.

This approach enhanced efforts in about a quarter of those who took part, although researchers say they need to run a larger scale trial with a control group to be sure of their findings.

AT can also be useful in determining just how much help a person needs. Many 999 calls are made for older people who have fallen, but this group may not benefit from being taken to hospital, a community-based alternative might be more appropriate.

Swansea University researchers are trialling a hand-held computer system that will help ambulance crews determine which older people should go to hospital after a fall and who would be better off with help from a local falls clinic or other intervention. ■

Pat Sweet is a researcher for the Foundation for Assistive Technology

More assistive technology projects will be showcased at this year's RAATE conference which will be held in Coventry over two days, November 30 and December 1 2009. More details from www.raate.org.uk. The Foundation for Assistive Technology has a website which includes a free, fully searchable database of over 900 research projects in the AT field: **www.fastuk.org**.

Bank statement

Swiss bank UBS is determined to treat the needs of disabled staff as a priority

Two years ago UBS launched the UK disAbility Awareness Network: its mission to attract and harness the talents of disabled people.

And despite the current economic difficulties, the Network's steering committee continues in its efforts to raise the bar for UBS in making improvements to facilities and influencing policies.

"We are a firm that values ability, regardless of disability," explains Richard Thwaite, chief technology officer of UBS Global Asset Management and chair of the Network in London.

"Our success relies on encouraging all employees to realise their full potential. We work hard to help them achieve this. Ours is a knowledge-based industry. Talented people with disabilities have valued contributions to make to firms like ours and it's important to provide them with the opportunities to do so."

Open to all

The Network was launched in the UK, with a second in Switzerland. Open to employees interested in disability awareness, the group focuses on education, recruitment and retention, employee support and accessibility for both clients and employees.

Since its inception, the disAbility Awareness Network has organised annual events to move disability up the company agenda. It has also sponsored seminars on mental health and caring for elderly parents and disabled children, as well as running recruitment events for people with disabilities.

As well as highlighting dyslexia, Richard Thwaite's Network is planning a disability day on mental health and stress

UBS targets disabled graduates as part of its hiring policy and recruitment is represented on the Network Steering Committee by both Campus and Professional Recruiting. Previous programmes have included the engagement of a specialist agency called Employment Opportunities to select disabled young people for a 10-week internship programme.

Attendees learnt about how UBS worked, about opportunities in the company and received feedback to help them improve skills such as their interview techniques.

"It helped build my confidence and I learnt that you can work in a high profile job and be treated equally," commented Stephen Mitchell, a student from Strathclyde University in Glasgow who attended the programme.

UBS provided Stephen who is visually impaired, with specialist software and a screen to magnify his computer display and cut down on reflections.

The investment bank has also arranged a series of days featuring presentations about disability and displays by disability charities.

Organisations including AbilityNet, Sane and the RNIB have visited UBS, and the company has also organised talks about disability by well-known people including broadcaster Frank Gardner and Marjorie Wallace, chair of the mental health charity Sane.

Dining with a difference

The Network has worked hard at getting over the business case for recruiting and retaining people with disabilities. The company hosted a Dining with a Difference meeting, which mixes food with short presentations and discussions led by experts.

Sessions have tackled the legislation that affects disability, the question of what language to use so far as disability is concerned and how to attract disabled people to work for a company.

At one time UBS joined with other banks via the Interbank Accessibility Group to put on a series of playlets featuring disabled actors performing scenes from a job interview, an employee's first day at work and a performance review.

Audiences were invited to use an electronic voting system to

Actors perform scenes ranging from a job interview, an employee's first day at work and a performance review

choose a particular course of action in each situation. Their choice was then acted out on stage

UBS is continuously looking at processes and how to make adjustments to its IT systems as easy as possible for all employees. The company has a self-help feature on its intranet that shows users how to alter their desktop PCs and material that advises them on best practice.

Thwaite would like to go further and improve services for clients. "Our relationship with customers is very different from that of a retail bank, we do not always have visibility of whether a client has a disability or not.

"However, we can influence our client facing areas and through raising awareness enable them to provide accessible products and services for all."

This year he is highlighting dyslexia as a pressing issue. "People aren't necessarily willing to come forward and discuss difficulties with reading and writing," he says. The Network is also planning a disability day with a focus on mental health and stress.

Pushing yourself too hard

Banking has a stressful, long hours culture at the best of times, but even more so in the current business climate. High achieving individuals can easily push themselves too hard, especially when it comes to hammering their keyboards.

"Although UBS has fewer incidents of work related upper limb disorder caused by repetitive keyboard work than similar organisations in the city," says Elaine Hunt, occupational health manager at UBS. "We take it seriously."

To try and head off potential problems UBS has a fast track physiotherapy scheme that aims to provide early intervention. When someone moves desks they are reminded to do an online Display Screen Equipment (DSE) assessment which involves filling in a form on the bank's intranet.

However, even with these precautions some of the 7,500 staff that UBS employs in Britain run into difficulties.

Jemma worked as a support analyst compiling large amounts of data which involved a lot of keyboard and mouse use. Over a period of three months she developed pains in her arms that affected both her work and home life.

Elaine arranged a face to face assessment, firstly with an occupational health advisor and soon after with an occupational health physician. It seemed that the pain and swelling was most likely to be due to work related upper limb disorder, or repetitive strain injury. The diagnosis was later confirmed by a rheumatologist.

"Jemma was understandably very anxious to get to the bottom of this problem and know what she could do to alleviate her discomfort," says Hunt.

"So in order to try to support her in continuing to work, a number of adjustments were discussed with Jemma in the context of her job, and with her manager."

The first step UBS took was to try and lighten the load by installing voice recognition software and reducing her keyboard use to four hours spread over the working day.

Dealing with RSI

In addition, she began to dictate information to a second person who entered data via a keyboard. Jemma began regular physiotherapy sessions and shiatsu massage.

The skilled nature of Jemma's work made it difficult to work with a helper. And it became clear that she was continuing to struggle, despite the support and adjustments, so the occupational health department recommended a six month period off work.

She continued with her treatments and had several assessments while she was at home. After four months Jemma began a gradual return to work over a period of eight weeks. Working time started at four hours for three days and increased back to normal in stages.

"Jemma did eventually make a return to full time working. She still has some discomfort but this is easily manageable and does not restrict her normal life," reports Hunt.

"Some long term adjustments have been needed to her working patterns such as having more frequent rest intervals and working hard on her posture and levels of physical fitness in the gym."

"All in all, this Jemma's case file was active for over two years but has now been closed since October 2008 and she remains well and fully functional in her post."

For all the problems in the financial sector, organisations like UBS show it is still possible to support disabled employees and give managers an insight into how best to meet their needs. ■

Learning the hard way

Students at the University of Southampton have been recording their experiences with assistive technology. EA Draffen passes on their tricks and tips

During the last two years students at the University of Southampton have been sharing their experiences with on-line learning as participants in the LexDis project, funded by the Joint Information Systems Committee (JISC).

They have been passing on strategies developed to overcome some of the barriers affecting their access to learning and teaching materials and to enhance the way they study using a range of technologies.

The students rarely talk about disabilities but more often about the difficulties they encounter with certain tasks and these have been stored in the LexDis online database resource (www.lexdis.org).

The database also contains guides for both students and staff as well as information about applications used across the university networks, along with news items and tips linked to the strategies that might making working on-line easier.

Some strategies have involved the use of well known assistive technologies such as screen reader, text-to-speech and magnification programs, but many more have involved technologies that can be found as part of the computer desktop settings or within applications and items that are freely available on the web.

The variety of technologies used and the way applications have been personalised makes us feel we have a group of agile technology users and that assistive technologies are just technologies you can use to make life or learning easier.

Assistive characteristics

We characterise assistive technologies as those used for communication and collaboration, the internet, multimedia, personalisation and productivity rather than using terms related to disability. It has often been the tasks that students undertake that have affected the technology choices they have made.

Browsing the database of strategies entails choosing from a list of difficulties that users experience. These problems are linked to a list of tasks, so for example there is no mention of dyslexia in the list, but rather planning and organisation, short term memory and written language difficulties.

Some strategies involve the use of mobile technologies. For example, Sarah relies on her mobile phone to aid her memory by recording notes that she adds to her essays.

She writes some work on the move and synchronises it with her computer later. She also uses the phone for tasks and appointments that can be viewed in her Outlook calendar. Other students have used their mobiles for capturing web page addresses or timetables or have their text read back with speech synthesis.

All the students changed their desktop settings in some way – it may just have been to de-clutter the desktop or alter icons so that they were more noticeable or larger.

Most wanted to use sans serif fonts such as Arial 12 point and others changed background colours or dulled their screens when taking notes in lectures, so as not to distract others. This tip is also useful when you do not want to drain battery power.

“Having things in electronic format is essential for me to cope with the demands of my course,” said Nick. “I would be drowning under a sea of paper otherwise. I do not have the dexterity to manipulate masses of sheets of paper. I have an OCR scanner and OmniPage character recognition software and together, these items scan documents and covert them into electronic text.”

Coping with multiple technologies

Nick juggles many different technologies throughout the day and has found that sheet feeder scanners solve the problem of having to scan individual pages and the use of two monitors means that it is possible to read documents on one screen and create content using the other.

When it comes to using interactive social networking or Web 2.0 applications, where the user can collaborate online; Google Docs, Maps and Books all feature in the list along with Facebook, MSN and Skype.

But there are also some unusual applications such as ‘Wordle’ for making tag or word clouds to see if you are sticking to the subject you are writing about! Having copied this article into www.wordle.net it is clear to see ‘technologies’, ‘students’ and ‘strategies’ are the keywords (see illustration below).

LiveJournal (www.livejournal.com/) is one of the most accessible ways of blogging or keeping a personal diary online. It can be used for sharing ideas and pictures and reflecting on learning. However, more

Nick Bishop: "Having things in electronic format is essential for me to cope with the demands of my course"

importantly it has a wide range of privacy and personalisation settings to suit the user with good keyboard access and easy login.

Sarah B. has used Phrase Express (www.phraseexpress.com/), allowing her to increase typing speeds with autotext and add many useful hot or shortcut keys to help her avoid the repetitive strain injuries she developed during her 'A' levels. The shortcuts can be used to open other programs or go to areas on the web quickly.

It appears that many students have found ways of improving their use of a browser and have made distinct choices between the various applications such as Opera to use the mouse gestures or Mozilla Firefox to make use of the many add-ins or Internet Explorer, which has better keyboard access to some media players and support for screen readers. Most students use the tab, favourites and bookmarking features and some change the background colours of web pages and make use of the zoom feature if they do not use magnification software but need larger fonts and graphics.

Lack of time

Some students were concerned that they were not very skilled computer users and all admitted that time was a real problem, so learning new complex technologies was not always easy when there was a course to be undertaken at the same time.

To quote Stephanie: "I am freshly new in my training with assistive technologies, but I can see the benefits. It gives you shortcuts, a better way of working. It's all right learning something, but the only way you retain that is by repetition, and the assistive technology allows you to do something once and then just keep going back over it.

"So, that's why, when I got all my software in autumn last year and they said: 'You need to have your training on this' I did feel I was doing two courses and that was, frankly, too much.

"I had to stay with my old bad habits because I just didn't feel I had the time to take out to learn something new to help me. It was a vicious circle, really. If only I knew two years ago what I know now life would have been a lot simpler. I would have had a lot more free time. I think it's great – for me personally. It's enabled me to be more focused."

Nick also said: "It's great to have these resources available. Without them it would be a lot harder to study and take a lot more time. I often need to scan something in, and if I can't do that, I'm reliant on Dragon to make notes because I can't keep moving the book or the article away from me. So I don't know if I would be able to study at university without them."

Those involved in the LexDis project hope it is going to continue, with more strategies being added to the database in order to keep up with new technologies and online learning ideas.

There are plans for it to be linked up with several other online resources such as those supported by JISC TechDis (www.techdis.ac.uk) in order to offer staff and students accessibility advice, hints and tips as well as learner experiences of a wide range of technologies that can both assist and enable access to e-learning. ■

The LexDis project team consists of Dr Mike Wald, Dr Jane Seale & E.A. Draffan University of Southampton.
The final report of LexDis is at **www.lexdis.org/project/reports**

Turning cartwheels into tyres

Mark Palmer looks at what 'wookag two' means for website owners

The publication of the Web Content Accessibility Guidelines (WCAG 2) may well have caused concern in many organisations as to whether their sites are still considered accessible under the new guidelines.

In most cases, the answer will be yes. WCAG 2 (often pronounced wookag two) is not so much a reinvention of the wheel as an updating of it: the equivalent of moving from iron rimmed cartwheels to the pneumatic tyre.

There are some differences though, as well as improvements and flaws with the new guidelines.

WCAG 1.0 was not wearing well. Outdated, vague, difficult to measure and not entirely even handed in the way it dealt with each particular disability group. WCAG 2.0 is updated but arguably still vague, although at least it appears to be better thought out and more even handed.

Probably the most fundamental change is the introduction of four guiding principles – all web content must be perceivable, operable, understandable and robust.

Guidelines are organised by principle and unlike WCAG 1.0, each checkpoint can be met to a variety of levels across A, AA or AAA, allowing conformance to a number of different levels rather than confining checkpoints to a single priority.

Mark Palmer's User Vision success is measurable

Not only does this provide more flexibility for anyone trying to implement the guidelines, it also removes the sometimes unfair prioritisation of checkpoints under WCAG 1.0

A case of priorities

Accessibility features that benefit one particular disability group are considered a priority one checkpoint, while accessibility features considered by another disability group to be of equal importance are consigned to priority two.

The level of detail in the supporting documents for WCAG 2.0 is impressive with both techniques and a list of examples of potential fails being provided. This certainly clears up many of the issues in WCAG 1.0 where not only was the checkpoint itself vague, but also what constituted a pass or a fail once you had actually identified the nature of the checkpoint.

Success in WCAG 2.0 is considerably more measurable. Whereas WCAG 1.0 used terms such as 'sufficient' when referring to colour contrast, WCAG 2.0 actually provides a ratio of 5:1 to pass at level A and 7:1 to pass at AA.

More measureable components

A further example is the stipulation that page content must be scalable to at least 200% of its original size. These ratios result in infinitely more measurable checkpoints.

Some of the more measurable checkpoints will no doubt lead to some head scratching, not least of which is the requirement that background and foreground noise differ by at least 20 decibels. Quite how that can be calculated by merely listening to audio or video content remains to be seen.

Further criticisms have, however, been levelled at WCAG 2.0, particularly that the accessibility of the supporting documents is suspect. Lengthy, jargon-filled documents containing numerous hyperlinks come in for criticism, as does the lack of clarity around some of the definitions.

For instance, an 'authored component' is described as 'an authored unit intended to be used as part of another authored unit'. This lack of clarity and the technology independent nature of the guidelines make them very confusing at times.

Criticisms and implementation difficulties aside though, for most developers with an understanding of and responsibility for accessibility, many of the techniques used to produce accessible pages and interfaces will remain the same and it is unlikely that pages will suddenly become completely inaccessible under the new guidelines.

Sites will need to be audited in order to determine which level of conformance they now meet under WCAG 2.0 and a degree of change may be required to meet the chosen level of compliance.

Both developers and business staff with a responsibility for web content should immediately download a copy of the new guidelines and begin familiarising themselves with the complexities.

Overall, WCAG 2.0 is a vast improvement on WCAG 1.0. It remains to be seen how easy these guidelines are to apply in practise and whether the device independence will result in the guidelines being more future proof. ■

www.uservision.co.uk

Mark Palmer is accessibility consultant at User Vision.

Size is everything

Some readers find it difficult to read some of the small text that appears on their computer screens. How can you adjust the settings on your computer to make the screen more readable?

Unfortunately there is no single button you can press that will instantly increase the size of all the text and images on your computer screen. Instead, you will have to make a series of adjustments for each program you use: your browser, word processing, operating system and so on.

Web pages are the biggest culprits for using small print. It is relatively easy, however, to correct this in Internet Explorer 7 by going to the page menu and selecting the zoom feature.

Some web developers try to fix the size of their text but you can circumvent this by going to the tools menu and clicking internet options. On the first page is an accessibility button which leads you to a list of options. Select the ignore font size option.

Fuzzy features

For desktop programs decreasing the resolution of the screen has the effect of making text and images on screen larger, if rather fuzzy. Access this feature by bringing up the control panel (in Windows XP) clicking on display and pressing the settings tab. There is a slider here which you can use to reduce the resolution.

You can increase the text size on Windows and many Microsoft programs by going to display in the control panel and selecting the appearance tab which has an option to change the font size.

However, while the menus, commands and so forth on most programs can be increased in this way, some cannot. The entries in my Outlook Express address book remain stubbornly small and some users may be puzzled by the fact that increasing the size of icons is a separate operation, which involves pressing the advanced settings button in the appearance tab.

You will also need to make adjustments to applications programs too. For example, in Word 2002 there is a zoom function in the view menu. There is a similar feature in Excel.

Microsoft also provides a magnifying accessory that makes items on screen larger than is possible using individual adjustments to text and images. You can find Windows Magnifier in the accessibility folder in the accessories section of all the programs' menus. The software magnifies the screen and displays it in a panel at the top of the page.

However, Windows Magnifier is limited and more user friendly programs such as Lunar, Magic, Zoomtext and SuperNova are available. These magnify the entire screen rather than just a portion of it.

Free packages

Although most of the better known packages are for sale, there are free magnification packages such as iZoom from Screenreader.

According to the RNIB, most people who use screen magnification also change the contrast and colour settings to make it easier to read. For example, they may set a black background with white text to make it stand out more.

Magnification software boosts the size of everyhthing on screen, which can create a problem for people reading material with lots of white space. They may think they have reached the end of a document. Low resolution images can become distorted and difficult to interprete when they are magnified. ■

Opportunity for all

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Turn on, tune in, drop out?

The UK is leading Europe in the switch to digital TV but is the TV industry dragging its feet on accessibility? David Johnston reports

The most seismic shift in consumer technology in decades is happening now. The digital TV (DTV) switchover sweeping Britain means that almost everyone will be able to receive the service by 2012. According to Ofcom, the UK is leading Europe in its implementation.

Because it uses less broadcast space, there will be more room to use DTV for new services such as wireless broadband, local TV and High Definition Television (HDTV).

Even more significantly, DTV enables the implementation of increasingly intuitive technologies that can and will make screen-based experiences more inclusive for broader numbers of society than ever before.

Notice that *Eastenders* no longer uses incidental music? That is because set-top boxes have audio description technology (AD) built-in, enabling visually-impaired consumers to listen to a narrative of what's happening on-screen.

Electronic programme guides (EPG) can flag up with an audible tone or on-screen prompt that AD is present.

Ofcom currently obliges broadcasters to air at least 10% of content with (AD) within a decade of being on air.

But the Royal Institute for the Blind (RNIB) is lobbying to double this, bringing legislation in line with Sky TV's March-announced bid to double the amount of AD services it offers for its programmes to 34,000 hours this year across all channels except Sky Sports.

Media Secretary Andy Burnham has appealed to other broadcasters to follow Sky's lead. Speaking to Parliament, the minister pledged to introduce new legislation if Ofcom's current investigation into TV access services recommends it.

Text-to-speech (TTS) technology is being developed for incoming set-top boxes that converts EPG on-screen prompts into speech. DTV will make sub-titling faster. The major consumer electronics manufacturers are shortly to launch new generation TVs with AD built-in.

What do we have to wait for still?

Real-time signing is missing at present: its bit-rate consumption would take up a channel in its own right. Also waiting in the wings are remote control devices that can be controlled by hand movement as well as voice-activated command systems.

Shorter-term, the Government has pledged support to seven million eligible people expected to qualify for special help through its Help Scheme. That is anyone receiving or likely to receive certain disability benefits; anyone registered blind or partially sighted; anyone aged 75 or over; anyone who has lived in a care home for six months or more.

The Scheme aims to assist by providing qualifiers with easy-to-use equipment; and help with installing equipment such as dishes or aerials, if needed to make the new equipment work.

People will be available to provide a demonstration of how everything works; as well as being on hand to help while users become accustomed to the technology.

In the current climate of economic recession, could inclusive digital development be stymied by a lack of cash?

There are factors militating against this. The Government wants digital to work not least as it has plans for implementing the technology longer-term for e-education and e-health.

Electronics manufacturers are waking up to the fact that wealthy baby boomers are ageing and in the process, losing some cognitive and physical capability.

Statistically, the average TV owner will lose some functionality during the life of his/her TV set. Manufacturers are having to factor this into the design of their products.

And if all else fails, there is always regulation. The auto industry is heavily legislated and its products brim with the latest intuitive technologies. If we can legislate for the implementation of these in the relatively hostile environment of the car, then surely we can in the home and workplace? ■

David Johnston works for advisory company DTA, www.dtaltd.co.uk. DTA is currently working on the creation of open technology standards in conjunction with the Digital TV Group (DTG), the industry association for digital television in the UK. Text-to-speech technology, which will be integrated for the first time into DTV set-top boxes launching in the UK this summer, is the outcome of a joint initiative involving RNIB, DTA and a manufacturer.

Further information on when your area in the UK goes digital is available at www.digitaluk.co.uk/when_do_i_switch and details on the help scheme at **www.helpscheme.co.uk/en/faq/index.php**.

Popular programs find their voice

Many widely used applications are in the process of being voice enabled allowing users to by-pass their keyboards and operate programs entirely by speech.

Mindjet's MindManager 8, a mind-mapping tool, was one of the first programs to be voice enabled using the speech recognition product Dragon NaturallySpeaking 10 and VoxEnable, UK-developed software from Citnexus.

VoxEnable links Dragon to Mindjet and other programs. To begin building a mind-map, a user issues the instruction 'new topic' or 'start brainstorm' then the software tool starts building the map based on the voice-commands.

Over 150 voice-enabled functions are incorporated in MindManager 8. Users can create 'maps' or diagrams of essays, meetings, business plans and so on, which

can be manipulated, scrolled, scaled, zoomed, printed and exported by voice.

"Speech technology with mind-mapping will be a potent productivity combination. Imagine never having to scribe your thoughts and ideas down again but instead energise the way brainstorms or planning meetings are conducted," said Rob Furnivall of Mindjet UK.

VoxEnable for MindManager 8 costs £29.95. A package consisting of Dragon NaturallySpeaking 10 and VoxEnable is £129. A bundle of all three products is on sale for £329 from Expressware.

Versions of VoxEnable are now available for mind-mapping programs MindGenius and Inspiration, as well as free ones for Skype, MSN, Notepad, Adobe Reader and Outlook Express.

VoxEnable has also been adapted for Adobe's Photoshop and Citnexus is working on versions for InDesign, Illustrator, Dreamweaver, Flash, Quark Express and Promethean Whiteboards.

"All we are doing is voice enabling the keyboard and mouse," says Ian Bourne, a director of Citnexus. "If an application is accessible we can voice enable it. We don't do away with a keyboard and mouse, but VoxEnable adds an extra dimension." ■

www.citnexus.co.uk
www.nuance.com
www.mindjet.com

Audio Notetaker exploits pauses

Those who need to record spoken material at meetings and lectures can add notes and other materials to their recordings with Audio Notetaker version 2, recently introduced by iAnsyst.

Audio Notetaker identifies natural pauses that occur in speech that has been recorded and presents the audio onscreen as a series of bars that correspond to passages of speech. The software works with a digital recorder and can be connected to a PC.

A new feature called Live Notetaker allows users to add keywords, highlight key points using coloured markers or break up their notes into sections as they are recording, making it easy to locate key information and recall past audio notes.

Users can also display PowerPoint slides, images alongside text from documents, web pages or notes alongside an audio recording, providing a workspace for comparing and reviewing different sources of information.

Operating in 'full-screen mode', students can playback, edit and review notes alongside the support documents, making it easier to organise documents and notes and view relevant files at the same time. ■

www.iansyst.co.uk

Briefs

Database of signers

In April the National Registers of Communication Professionals working with Deaf and Deafblind People (NRCPD) launches a free-to-access database of contact details for registered sign language interpreters and speech-to-text reporters. The service will help public facing organisations communicate better with hearing impaired people, says the NRCPD.
www.nrcpd.org.uk

No hands phone

Burnside Telecom has introduced a phone that can automatically answer calls in hands free mode for those who are able to talk but are unable to come to or operate their phone. The feature, available on the Burnside P230 model, is designed to make it easier for the elderly, infirm or disabled to take calls. To prevent unauthorised use, all outgoing calls can be restricted to those numbers stored in memory keys.
www.burnsidetelecom.com

First chapters free

HumanWare, maker of the Victor Reader Stream DAISY talking book reader, and accessible book distributor ReadHowYouWant are offering readers the first chapters of 20 bestselling books free. The books available in DAISY and Braille formats can be downloaded from Humanware's website. Readers who want to buy the books can do so via ReadHowYouWant's site.
www.readhowyouwant.com
www.humanware.com

Brain games train minds

A brain training program called Play Attention, based on NASA software developed to help astronauts concentrate better, is now being used to help children with attention deficit disorder.

Children play a series of games wearing a helmet that reads the electrical signals given off by areas of the brain involved with concentration. The signals are used to control the computer games.

"Your mind becomes the mouse or joystick," explains Zara Skidmore of Games for Life, the program's UK distributor. "These games not only teach you to improve focus, but also to ignore distractions, develop memory skills, finish tasks, and become organised.

"These skills can improve school work, improve self-esteem, and make life at home much happier."

Play Attention is based on neuro feedback. Users can see how focused they are as they play the games. In this way they learn to increase their concentration.

Playing focuses the child's mind

Users are set goals to improve their performance. Games for Life claims that improvements achieved by using the system for two or three times per week for a year are still in evidence a year later.

Play Attention costs £1795 for a home use licence, £1995 for a professional licence and £2495 an educational licence. ■

www.gamesforlife.org.uk.

ClaroRead Version 5

The ClaroRead text-to-speech literacy aid has been given a makeover with the introduction of features such as visual scanning, new human-like voices and improved methods of capturing documents.

A 'focus sentence' feature greys or dims out sentences in Word not being spoken by ClaroRead, while 'word trail' makes words colour progressively as they are spoken by ClaroRead.

ClaroRead Version 5 includes ClaroCapture, a program that allows users to collect text from any document and web page, grouping it as a project file. The research file can be sent to Word or Power Point.

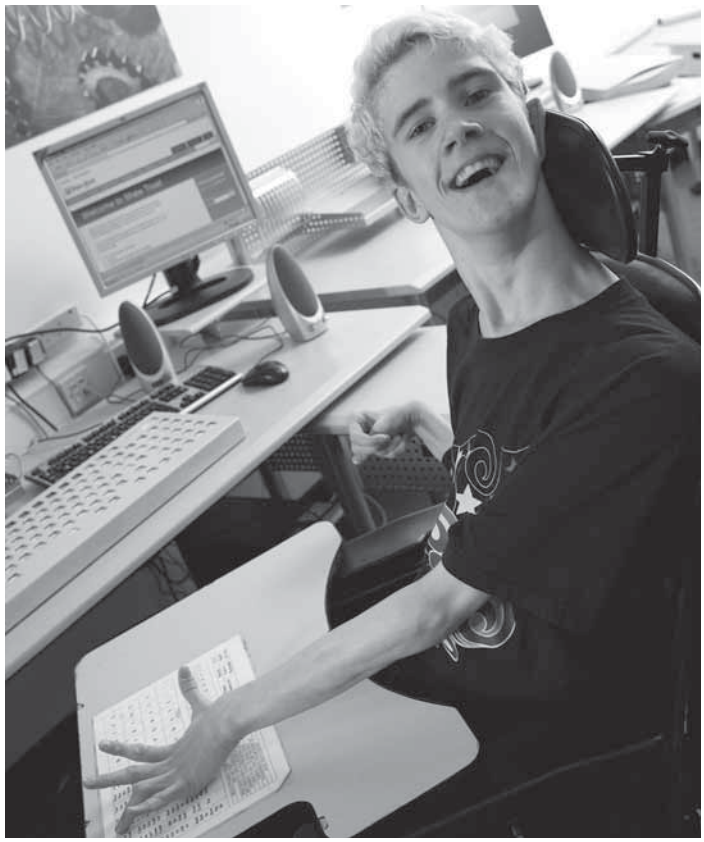
Two new voices have been introduced: a Scottish female Heather and another English male voice called William.

Prices start at £129 plus VAT for the ClaroRead Standard CD. ■

www.clarosoftware.com

Shaw Trust
Ability at work

Web Accreditation Service



Why is Web Accessibility Important?

First and foremost, because it is a legal requirement for your organisation's website and intranet to comply with the Disability Discrimination Act (DDA). But perhaps more importantly, it makes good business sense to ensure all your customers can access your goods and services.

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The service offers a full technical audit with rigorous user testing. Every member of our testing team is an experienced assistive technology user. They understand the frustrations of not being able to access websites that don't consider the needs of people who are disabled. We're passionate, enthusiastic and committed to making it work and we have the experience to make it work for you.

Meet the Team

We are happy for you to visit and spend the day with our user testing team during the testing of your website – this has proven very popular with our clients as they can see first hand how adaptive technologies can improve disability access to an otherwise non-accessible website or application.

Contact: Cam Nicholl 07973 234 489
cam.nicholl@shaw-trust.org.uk
or call 0300 30 33 120
Visit: www.healthyworklife.org.uk

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BCS makes 'driving test' more accessible

The British Computer Society (BCS) has created an accessible test system that will support disabled candidates who wish to take the various user qualifications it offers, including the European Computer Driving Licence (ECDL) exam of basic IT skills.

Disabled people are more than twice as likely as non-disabled people to have no qualifications (26% compared to 10%), according to the UK's Office for National Statistics' Labour Force Survey.

The system is aimed at deaf candidates who are British Sign Language (BSL) users. However, it will also help people in other major disability groups.

Candidates can sit the ECDL tests with a choice of text only or with the additional support of either video clips showing British Sign Language (BSL) interpretation or a human sounding synthetic narration.

The system utilises the EasyConverter software package developed by Dolphin Computer Access.

This software has enabled BCS to generate the audio output for the test materials. It will accommodate individuals with visual impairment, specific learning difficulties such as dyslexia, deaf candidates who have a low literacy level in English, and candidates for whom English is a second language.

Dolphin's software will also allow BCS to produce materials in large print, Braille and Daisy formats as well audio so it can provide a wider range of accessible services.

Pete Bayley, BCS director of qualifications explains: "BCS is committed to meeting its accessibility responsibilities as required by legislation such as the Disability Discrimination Act and we believe that this innovation will have a significant impact for disabled candidates." ■

www.bcs.org/qualifications

Remploy tackles long term absences

Remploy, the employment firm for disabled people, has introduced a service called Resolve that aims to reduce long term absence from work by helping workers return to their jobs.

A vocational rehabilitation consultant carries out assessments of what adjustments an employer could make to accommodate them. This includes suggestions for possible adaptations such as specialised IT equipment and software, or other adaptive technology.

The consultant draws up and implements an action plan with the employee to help them to return to work, in partnership with the employer.

Effective early intervention is the key, says Remploy, because research by the Health and Safety Executive suggests that after six months off work, only 50% of people are likely to return to work. Early intervention can also prevent minor issues turning into serious ones.

"Long term sickness absence is a persistent problem affecting many businesses throughout the UK," says Remploy.

"In the current economic downturn, it is even more important for businesses to ensure they are using all their resources to the full, as absence leads to a less efficient business, excess pressure on time-strapped managers and higher costs."

www.remploy.co.uk ■

Briefs

Reasonable Adjustments

The Employers' Forum on Disability (EFD) has published the latest guide called ***Reasonable Adjustments*** in its line manager series. The guide helps managers identify who needs an adjustment, decide if an adjustment is reasonable and know where to go for more help and advice.

The guide helps employers reduce their legal risk on areas covered by the Disability Discrimination Act. In 2007, EFD's Disability Standard benchmark found that one in three employers is at legal risk. Members can buy five copies for £10.20 each.

www.efd.org.uk

Multi-tasking audio mixer

The Duo-Comm audio mixer has been developed by RNIB to enable users of voice assisted software such as JAWS, SuperNova and other similar products to listen to a computer and answer the telephone with the same headset.

The Duo-Comm has three modes; telephone, computer and mixed. A user can switch modes with a simple dial switch and listen to either the call or your computer in both ears. There is even a mixed mode to listen to a telephone call in one ear and the computer in the other. The Duo-Comm costs £127.65 or £146.80.

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AbilityNet is a totally independent national charity, working directly with thousands of people every year to find accessible IT solutions, no matter what their age or disability. We know from practical experience what works and what doesn't, and the real problems people face. As a result we now help and support a wide variety of professionals who wish to extend their knowledge or solve difficult issues. For informed, impartial advice it makes sense to contact AbilityNet.

AbilityNet's one-stop shop includes free information and advice; individual assessments, installation, training and support; accessible IT kits for public access centres; courses, seminars and practical workshops; accessible web design and audit service; consultancy.

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Warwick • CV34 5WS
*Tel: 01926 312847 • Fax: 01926 407425
(*Minicom accessible)
Email: enquiries@abilitynet.org.uk
http://www.abilitynet.org.uk
Charity no. 1067673

AbilityNet

Adapting Technology ▪ Changing Lives

BulletProof service resolves conflicts

Assistive software is more prone to crashes caused by conflicts between programs than mainstream products.

But education supplier Invate has developed a service that allows students to get their PCs going again by pressing a single button.

The BulletProof service, which costs £180, is available to customers who buy their IT systems from Invate, which supplies software, hardware and training.

Invate has spent nine months developing software that restores systems and application software to the state it was in when it left the company.

"Google toolbar can conflict with TextHelp Read & Write Gold 8.1 and some Nokia phone software causes total software failure with specialist voice programs," explains Invate managing director Chris Quickfall.

The Gateshead-based firm received EU funding for the project, which involved collaborating with software companies Microsoft and Acronis.

Before sending systems out to users, Invate removes all non-essential software from PCs to minimise software problems. Engineers install and configure up to five programs including TextHelp, DragonNaturally Speaking and Microsoft Office.

The company also places a compressed image of the system's software in a hidden location and installs software that backs up user data files online and will reset the system using the image and the stored data files.

Invate's software will rebuild the links from a user's software to their personal data in under 30 minutes. "With BulletProof none of their personal files or Dragon voice data, for instance, are deleted," says Quickfall.

The company also provides technical support to diagnose faults and fix them using remote desktop access. ■

www.invate.co.uk

Texthelp refines Gold

Texthelp has added new features to its Read & Write Gold literacy software. Read & Write 9 Gold now has screen masking that allows users to tint sections of the text window and new voices designed for education.

The company has added a translator feature that translates individual words into French, Spanish, German and Italian. And the program has improved spelling, dictionary and homophone support.

Read &Write 9 Gold can be used to improve access to virtual learning environments (VLEs) and digital exams. A single copy costs £320 plus VAT and delivery. ■

www.texthelp.com

Literacy link up

Inclusive Technology, the education supplier, is working with US firm Don Johnston on a series of bundled systems that help with literacy.

Two packages were announced at BETT. The first is an AlphaSmart Neo One note taker with Don Johnston's word prediction software Co-Writer. The writing support package costs £210.

A second offering, which teams Co-Writer with an Asus EEE PC running the Windows XP operating systems, costs £355.

Co-Writer interprets misspelled words and reads out alternatives. The program contains hundreds of topic dictionaries that help pupils with their spelling.

Other packages in the pipeline will include Don Johnston's Read:Outloud text reader program. ■

www.inclusive.co.uk

Cool aid for communications at under £100

Communication aids for people who have difficulty speaking are expensive. They cost up to £5,000 and are often implemented on older hardware.

AssistiveWare, a Dutch company specialising in assistive software for Mac systems, has launched text-to-speech software for the iPhone and the iPod touch costing under £100.

Proloquo2Go is based on Acapela Group software and will be available from Apple's App Store of third party iPhone software this spring. It will read aloud text on the two Apple handhelds and display it as a series of symbols or images of the words.

AssistiveWare recommends plugging the hardware into a loudspeaker to get better sound quality.

"Alternative and augmentative communications are often rather old fashioned and people don't like being different," says the company's chief technology officer David Niemeijer. "For the first time it can be both useful and cool." ■

www.assistiveware.com

Employers' Forum on Disability Events Calendar, April to June 2009

Visit www.efd.org.uk/events to find out more about these events and to make a booking.

APRIL

Telephone Tutorial: Reasonable adjustments for people with autism
2 April 2009 3pm-4pm.
Free to EFD gold members.
£60 (member/charity), £99 (non member).

Telephone Tutorial: PDF accessibility masterclass
22 April 2009 2.30pm-4pm.
Free to EFD gold members.
£60 (member/charity), £99 (non member).

MAY

Telephone Tutorial: Managing stress in the workplace
6 May 2009 3pm-4pm.
Free to EFD gold members.
£60 (member/charity), £99 (non member).

Disability Discrimination Act Masterclass Part II (employment)
London 12 May 2009 10am-4pm.
£299 (member/charity), £420 (non member)
.
Scottish Forum: Customer & service user focus
Sponsored by HBOS.
Edinburgh 19 May 2009 10am-4pm.
Free to EFD members.

Workshop: Reasonable adjustments your questions answered
Manchester 19 May 2009 10am-4pm.
£275 (member/charity), £399 (non member).

Hot Topic: Encouraging disclosure of disability—more than just a tick box
Liverpool 21 May 2009 9.30am-2pm.
£170 (member/charity), £255 (non member).

JUNE

Telephone Tutorial: Attendance management and disability
17 June 2009 3pm-4pm.
Free to EFD gold members.
£60 (member/charity), £99 (non member).

Annual Conference 2009 Disabled people: valued employees, customers and stakeholders in a changing world
London 23 June 2009 9.30am-4.30pm.
£170 (member/charity,) £300 (non member).

EFD member & charity rates and non-member rates are displayed exclusive of VAT. All events include refreshments. Event delegate packs are available to purchase if you are unable to attend an event.
For full details and to book, visit www.efd.org.uk/events or call 020 7403 3020

Contact us: Employers' Forum on Disability, Nutmeg House, 60 Gainsford Street, London SE1 2NY
Telephone: 020 7403 3020, Textphone: 020 7403 0040, Fax: 020 7403 0404, Email: events@efd.org.uk

Diary of events

THE ERGONOMICS SOCIETY 60TH ANNIVERSARY CONFERENCE

22-23 April 2009
Royal College of Physicians, London
The Ergonomics Society Annual Conference covers all areas of ergonomics, human factors and usability.
Fees: Members one day £195 + VAT, two days £375 + VAT. Non-members £275 and £500. Students £127.66 and £187.23.
Further information:
email s.hull@ergonomics.org.uk, call 01509 234904 or visit www.ergonomics.org.uk.

E-ACCESS 09

23 April
Olympia Conference Centre, Olympia, London
Session topics include 'Happy customers, happy staff in an ageing society'; the future of accessibility; and the new WCAG 2.0 web access guidelines; with expert speakers from organisations including the BBC, Yahoo! and Lloyds TSB.
Fees: Public sector: £195 plus VAT; private sector: £295 plus VAT; small charities (turnover less than £150k a year) and not for profit organisations: £165 plus VAT.
Further information:
Call Elodie Robertson on 01883 344799; email at elodie@headstar-events.com or visit the site at www.headstar-events.com/eaccess09/.

SPECIAL NEEDS NORTH

24-25 April
Manchester Central (G-Mex Centre), Manchester
Special Needs North is the leading exhibition in the north of England for teachers and school support staff.
Fees: Seminar tickets cost £12.
Further information:
Call 020 3194 3097, email melanie.duck@tsleducation.com or go to www.teachingexhibitions.co.uk.

NATIONAL DIGITAL INCLUSION CONFERENCE

27-28 April
QEII Conference Centre, London
The fourth annual event bringing together over 300 experts, decision-makers and practitioners to network, debate digital inclusion policy and practice and shape the agenda for action that delivers 'empowerment through technology'.
Fees: Private sector £395, public sector £345, charities and voluntary sector organisations £295.
Further information:
Visit www.nationaldigitalinclusion conference.co.uk or call 020 7378 0422.

AUGMENTATIVE AND ALTERNATIVE COMMUNICATIONS (AAC) STUDY DAYS

Literacy for All
London 5 May, Manchester 7 May, Dunfermline 11 May
Designed for people working with emergent or beginning readers.
The Basics of AAC
London 3 June
An overview of augmentative and alternative communication – from no-tech to high-tech.
Fees: From £85.
Further information:
Visit www.communicationmatters.org.uk or call 0845 456 8211.

COMMUNICATIONS MATTERS ROADSHOWS

Llanelli 1 June, Belfast 11 June, Garstang 24 June, Worcester 30 June
The road shows provide an overview and an update of specialised communication aid technology for use by people with severe speech and communication impairment and writing difficulties.
Fees: None.
Further information: Email admin@communicationmatters.org.uk or visit www.communicationsmatters.org.uk.

NATIONAL ASSOCIATION OF DISABILITY PRACTITIONERS (NADP)) ANNUAL CONFERENCE

2-3 July
The Nottingham Belfry, Nottingham
The keynote speaker is Tony Payne from University of Tasmania who will talk on creating accessible teaching and support in Australian universities.
Fees: Before 10 April: members £370, non-members £450. After 13 April: members £420, non-members £490. Single days either £170 or £210.
Further information:
Call 01604 497933, email admin@nadp-uk.org or visit www.nadp-uk.org.

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john.lamb@abilitymagazine.org.uk

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

British Computer Society Disability Group
01793 417723
graham.mclaughlin@hq.bcs.org.uk
www.bcs.org/disability

Directgov
Government site with help on employment, training, education, financial support, transport, rights and other issues for disabled people
www.direct.gov.uk/en/disabledpeople/index.htm

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

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

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

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

Top website

Voice enabled websites help those with low vision, language problems or reading difficulties access content by reading it aloud in a human sounding voice. Text-to-speech software is usually delivered as a service and includes a tool bar that allows users to configure the system. Output can usually be saved as an MP3 file. Stanbridge Earls School for children with learning difficulties recently installed Texthelp's Browsealoud system on its web site. "It has been a 'must have' tool for the school, especially as it makes the learning process easier with the introduction of a friendly voice reading out the course material," says headmaster Geoff Link.
www.stanbridgeearls.co.uk

■ **If you have a favourite website in the accessible IT field share it with others through *Ability* by sending it to john.lamb@abilitymagazine.org.uk**

Crystal ball gazing

Kevin Carey re-examines some of the technology breakthroughs disabled people need

Kevin Carey is director of Human-ITy, a UK charity formed to foster digital inclusion for disabled and other disadvantaged people. www.humanity.org.uk

Recently, in Japan, I saw a pair of speakers to die for: the sound source was in the base of two elegant, glass tubes approximately 1.5 metres tall which contained a light source whose colour could be changed according to the time of day, the occasion or the mood.

The sound of a Beethoven Piano Trio was stunning. They are already in use in top restaurants and it won't be long before they banish ugly speakers from our houses.

It was the combination of the aesthetic and the functional that set me thinking of the breakthroughs which disabled people need, which are possible, which have even tentatively emerged, which seem to have disappeared but which should be a small but important part of our recovery strategy.

Automated data ranking

I first saw a system 15 years ago that ranked email according to user behaviour; if you answered emails from Jim immediately they went to the top of the display; if you ignored emails from Brian they languished at the bottom.

The technology is very useful for people who can't see or have physical disabilities as it cuts down the operation to click on what you want and get the job done.

This kind of ranking is good not only for email but also for default set-ups for electronic programme guides, topic searches, shopping lists and any kind of 'favourites' function. It's so obvious that I can't work out why it isn't more or less universal.

Robotics

Around 2000 I told Guide Dogs for the Blind that by 2010 robots that could pick up GPS/LBS data, get you where you wanted to go, avoiding potholes and taking you safely across roads, would be cheaper and more reliable than Labradors.

I still can't work out why I was wrong. Sony's Aibo was launched in 1999 but was sold as a gimmick dog rather than a working robot and is, sadly, a casualty of the current downturn rather than being seen as an icon of the recovery.

All the technologies for replacing dogs and giving blind people a much more reliable and flexible service that requires much less training and maintenance are in place; but nothing significant is happening.

In this case we must take into account the natural preference of the public for buying dogs rather than robots, even if the latter are better for the supposed beneficiaries but, even so, the failure is startling.

Monitoring

No less surprising is the continued failure to use location-based services (LBS), the global positioning system (GPS) and camera technologies to help people remain independently mobile by linking them to remote monitors such as carers, family members or even specialist centres. One critical point of this kind of technology is it breaks the acute division between total independence and being housebound.

Another breakthrough in the Sony labs in the late 1990s was the beginnings of technology to react to gestures such that a wheelchair user could make a tiny gesture which would open a door.

Indeed, one of the most obvious architectural failures of the past decade has been the slow growth in the use of automatic and 'intelligent' doors and windows, although the problems on trains tell a cautionary tale.

Simulation

Although we are familiar with the use of simulators for airline pilot training and in games technology, it seems not to have found its way into rehabilitation.

From journey planning to seeing the detail of a building that natural vision can no longer provide, simulation uses the best of our design and visual technologies to break down the traditional barrier between depiction and reality in the analogue world.

Direct imaging

I wonder whether the Pentagon snaffled the early research on bypassing the screen so that a laser can transmit an image directly from source onto the retina, bypassing screen technology and the damaged parts of eyes. It sounds scary, but so did laser technology itself when it first emerged as an ophthalmological tool.

If all this sounds far-fetched, compare the state of IT 25 years ago and now. The disability sector needs the imagination to get beyond word processing. ■

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National Federation of the Blind of the United Kingdom Viewport Vol 57

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