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Accessible IT at work

Issue 77 Spring 2010

The ups and downs of high-tech design

- Why Americans are remaking their access laws
- Interview with Ian Karten, the computer-aided philanthropist
- Mobile readers go head to head
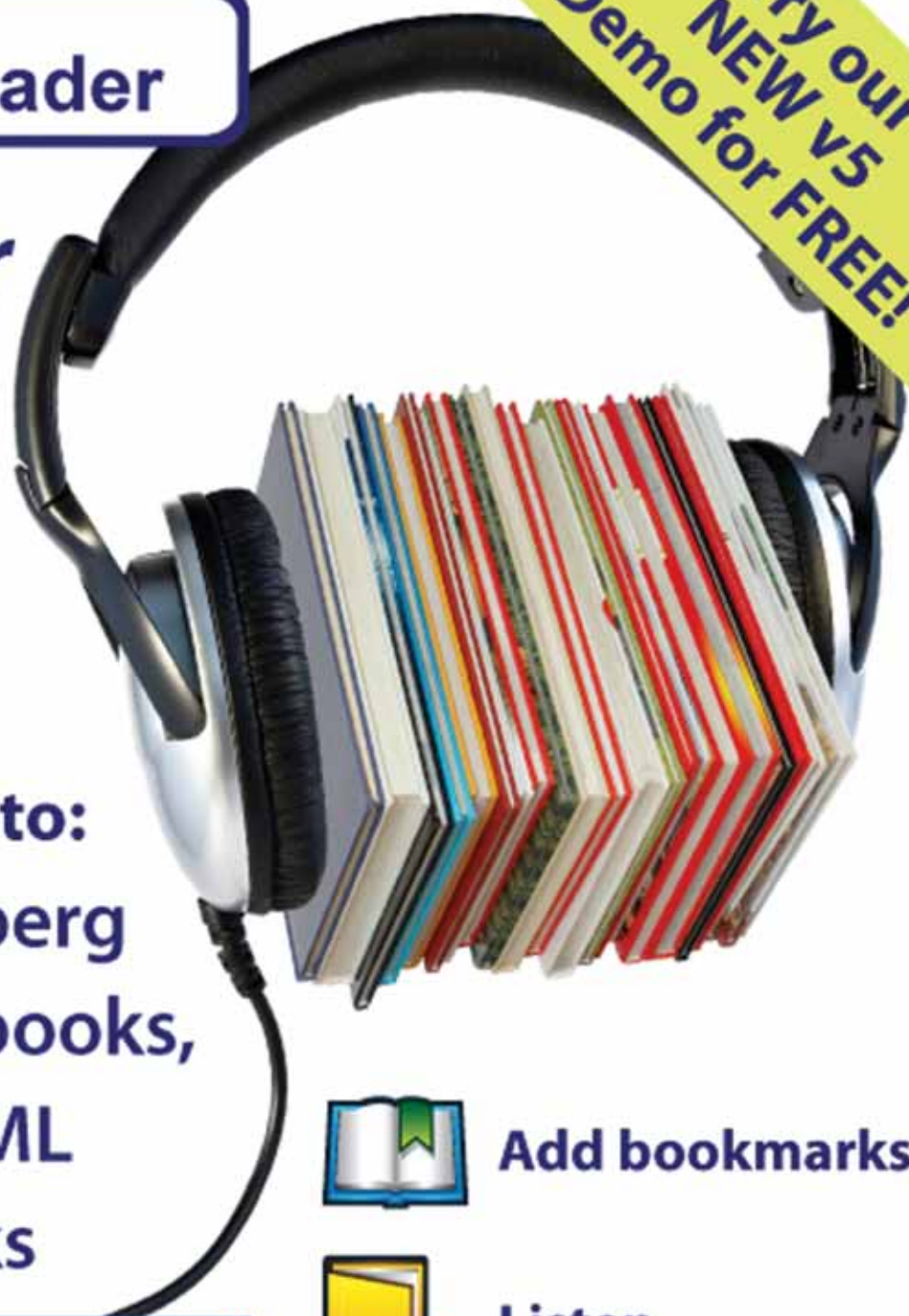- The profession: a new page aimed at disability professionals

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Delegates at the CSUN conference were in an upbeat mood as Obama pushes his agenda forward, says John Lamb

President makes good on his promises

Conferences and exhibitions always have a buzz, none more so than the California State University Northridge (CSUN) jamboree, which after 25 years is now the largest gathering in the world for those involved in technology for people with disabilities.

The event, held this year in San Diego, California, undoubtedly squeezes in more sessions than most with meetings starting at eight o'clock in the morning and going on late into the evening.

American delegates from the public sector were on a high this time, buoyed up by the feeling that President Obama is now making good on his promise to push forward the disability agenda.

One of the stars of the show was Kathleen Martinez who, as Assistant Secretary of Labor for Disability Employment Policy, is responsible for pushing up the employment figures for disabled people.

Among blind Americans, for example, the proportion in work is fewer than 30%. A fact acknowledged by Martinez, who referred to serious issues for blind people. "We know we have to do something about it," she said.

Martinez, who is herself blind, has just completed a six-city listening tour to gather information on system barriers and best practices relating to the employment of people with disabilities. Martinez is hosting a recruitment fair that will involve interviewing 600 disabled people for jobs in Washington.

"People want to see Federal Government walk the walk rather than just talking about it. People without evident disabilities are ignored, we want to breakdown the silos [in government] and work together," she says.

One aspect of the way that the US approaches disability that is much admired abroad is Section 508, the law that obliges federal agencies to buy accessible equipment for disabled employees. The legislation requires suppliers to adapt office equipment such as computers, photocopiers and telephones.

At CSUN the legislators held a public hearing at which delegates were able to respond to proposals to refresh Section 508. The overwhelming message was that change should come as quickly as possible.

The fraught issue of making texts available in machine-readable formats so that people with reading difficulties can access them also reared its head.

Digital rights management, the effort by authors and publishers to protect copyright by preventing unauthorised copying, means that disabled people are not able to read all electronic texts.

However, the Daisy Consortium claimed that digital rights could be made available to people with disabilities without compromising copyright.

The arguments on this and other issues connected with Section 508 have still to be settled, but it is difficult not to admire the open way that Americans go about the business of legislating and the 'can do' attitude of so many associated with disability rights. ■

A defeatist message on disabled employment?

Kevin Carey's article in the current edition of *Ability* magazine (Issue 76, p30, Life in the slow lane), expresses one obvious truth: a blind data processor is, other things being equal, likely to be slower than a sighted counterpart. But just how relevant is this truism to real visually impaired people in the real labour market?

Kevin applies it to the widest range of ability that we find among visually impaired people in employment. "At the 'top end' of the market, the real premium is on wisdom, the ability to add deep experiential value to data aggregations."

Just so, but that does not happen only at 'the top end of the market'.

True, there are outstanding visually impaired people working as lawyers, financial advisers, university lecturers and the like. But they constitute a small minority among approximately 25,000 who are in paid employment in the UK at present.

They are found in a very wide range of jobs, but many of them are in offices, where they have to process data. But this is only a part of the job and any disadvantage arising from being marginally slower in data processing is off set by wisdom and experience relative to the whole job, which makes them valued by their employers.

It is unfair and misleading to imply that, like the blind basket makers Kevin knew in the Caribbean, they make more errors than their sighted peers and depend for their employment on subsidy.

Switching to the other end of the impairment range, Kevin remarks: "perhaps most difficult of all … are the problems of those with intellectual disabilities who find the accumulation of options bewildering." No doubt, but who has seriously proposed that data processing is an appropriate occupation for people whose visual impairment is compounded by intellectual difficulties?

I know of no one who would make such a case. There is growing evidence that appropriate jobs can be found for such people. The new RNIB social firm, CONCEPT, has demonstrated what many would have thought impossible a few years ago, that visually impaired people with intellectual difficulties can work successfully in the catering industry, even in the mainstream sector of it. What is crucial is that people receive impairment-specific training, support in job seeking and practical support in the work place.

Other examples show that this can work. When Remploy PLC was reorganised in 2007, during the first year it placed over 100 visually impaired people, who had formerly been employed in its sheltered factories, in mainstream jobs.

Such employment need not be subsidised in the sense of tolerating inefficient work. Bodies like the European Union of Supported Employment are showing how people with intellectual difficulties can be placed in mainstream occupations by making reasonable accommodation for part-time work, wage/benefit links and other kinds of support.

In sum, I think Kevin's article is in danger of sending an unnecessarily defeatist message to employers and others. This is because he seems to generalise from the field of data processing (in which he is an undoubted expert) to the world of work at large.

There is a growing body of international evidence to show that visually impaired people are active competitively in scores of different occupations. To enlarge this number we need to remove barriers for the rest by funding appropriate rehabilitation, training and support into work.
Dr Fred Reid
Kenilworth
Dr Fred Reid is author, with Dr Philippa Simkiss, of The Hidden Majority: Economic Inactivity among Blind and Partially Sighted People in Sweden, Germany and Romania (European Blind Union, 2009).

Teacher tones in to Tinter Lite
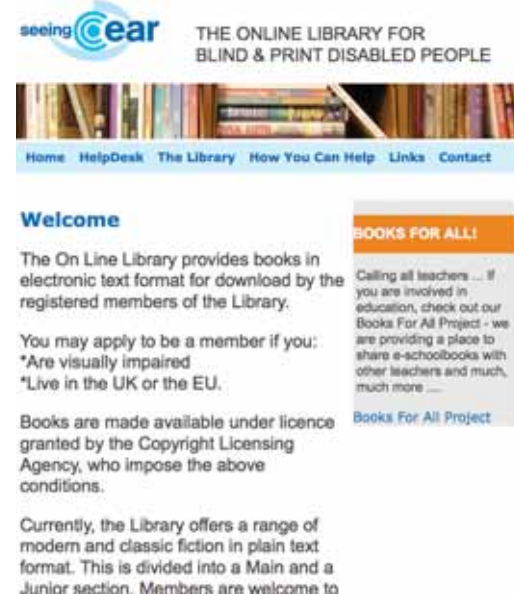
I am an IT technician at a school. One of our teachers with dyslexia has problems reading black text on a white background, in other words most PC screens that involve text or typing. I recently came across some software which is making life much easier for him. It is called Screen Tinter Lite (www.bltt.org/software/ screentinterlite/index.htm) and allows users to adjust the colour properties of a Windows display.

If you haven't come across it, you may want to mention it in *Ability*.
Nick Holme

Reading the riot act

Thanks for running the note about the Seeing Ear and Books for All in issue 76 of *Abil*ty; just a note to say that the URL in the piece should take the reader to the Seeing Ear library at www.seeingear.org/.

The URL you have is www.books4all.org.uk, which is for the Communication, Access, Literacy and Learning's (CALL) Books for All site. Books for All is a CALL Scotland initiative promoting the use and provision of books in accessible formats, and the Books for All web site is the 'home' for this work.

As part of this, we're working with the Seeing Ear project to develop its online

library. We've also developed an online textbook library of accessible formats in Scotland, called the Books for All Scotland Database, which is at www.booksforallscotland.org.uk/.

We're aware that this proliferation of books for all stuff is a tad confusing, but the basic idea is that Books for All is the overall concept, and within this concept so far are two libraries of books in accessible formats.

Paul D Nisbet
Senior Research Fellow
Communication, Access, Literacy and Learning (CALL), Scotland

Hunting for a bigger mouse

My father has been able to use his computer for a long time but is currently having problems using the mouse due to involuntary movements and loss of fine motor skills. We have had the computer slowed down but this isn't really helping. Is there a mouse on the market that is bigger or needs a more definite 'click' action that may be able to help?
Val Aldridge

Editor's note. There are so many possibilities (there are over 1,000 types of mouse on the market) that it would probably be best to go to an organisation such as Abilitynet (www.abilitynet.org.uk) to try some out.

You might consider a track ball (an upside down mouse that is controlled by moving a large ball). They are good for people without fine motor skills. There is also The Assistive Mouse Adapter that is designed to eliminate tremor from mouse movements and was developed by IBM. Details at www.montrosesecam.com/

Choosing the right font

What is the correct font size to use when creating a page for the partially sighted?
Margaret Monkman
Senior Library Assistant

Editor's note. You don't say whether you are talking about web pages or printed pages. So far as web pages are concerned, the important thing is to build a site that is flexible and allows the user to exploit the functions provided in their browser to increase or decrease text size. This means avoiding absolute units and defining relative font sizes that users can adjust.

On the print side, the RNIB's large print books are set in 16pt fonts. However, the organisation's clear print guidelines specify 12pt to 14pt: *Ability* produced a show guide for RNIB's Techshare conference last year in 14pt (illustrated above). One point the RNIB makes is that needs vary so it helps to hold text files that can be output in a variety of type sizes when needed.

Modified cursor

Can a computer's cursor be modified beyond the specifications on the control panel? I would like to increase the size of my cursor considerably.
Jennifer Sampson

Editor's Note. There are programs that you can download that a create a very large cursor and pointer. I just tried this one at www.brothersoft.com/downloads/mouse-pointer.html

Screen reader comparison

Do you know of any comparisons between screen readers that have been done? I need to evaluate some from both a usability and from a cost angle. I will also be looking at
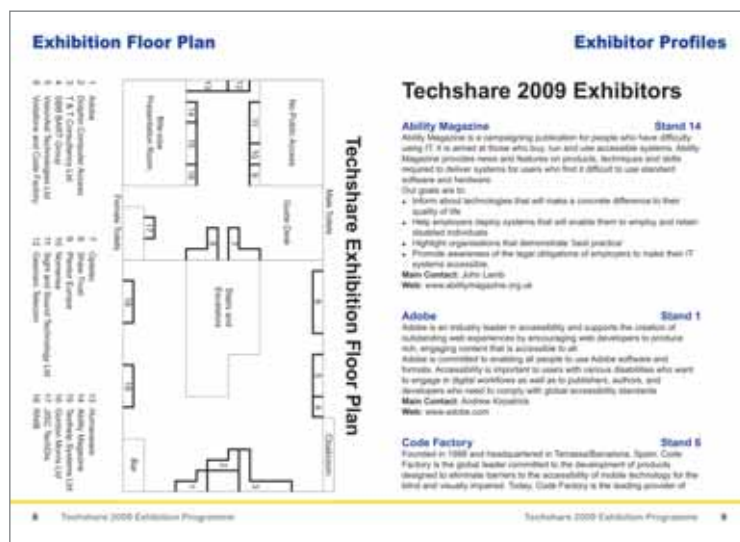
free downloads as well. I am particularly interested in it from a public access angle, so I need to find something that is quite intuitive and doesn't disable a PC when it is on there. Anything you can point me towards would be really useful.
Sarah Tonks
Community Engagement Officer
Corporate Policy and Research
Hull City Council

Editor's note. *Ability* ran a comparison of JAWS, HAL and Window-Eyes back in 2006 (Issue 62), courtesy of RNIB. Obviously things have moved on a bit since then, especially with the release of free screen readers such as NVDA and Thunder. RNIB remains a first stop for information but Wikipedia has a pretty comprehensive list of screen readers at http://en.wikipedia.org/wiki/Comparison_of_screen_readers

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

Kids get Home Access 2

Some 12,000 children with complex disabilities are now able to apply for a free Home Access package with specialised assistive software and hardware, although the systems will not be delivered until the summer.

Although the Home Access scheme, designed to provide 250,000 systems to children in families on low incomes, started in January, equipment has only now been made available to those with more serious disabilities.

The small suppliers who develop systems were initially unable to come to an agreement with Becta, the technology agency responsible for Home Access.

Neil Maclean – executive director Becta (right) with Keytools' general manager Simon Colebrook

Home Access gives low-income families, without access to a computer or the internet at home, the opportunity to apply for a grant to buy a device and/or one year's internet access.

Package 1 includes a suite of assistive technology software as standard, and families can also apply for additional equipment such as an adapted mouse, keyboard and keyboard stickers.

Children with more profound needs can apply for Assistive Technology package 2 to receive a bespoke solution.

Families requesting Assistive Technology package 2 will be given a preliminary evaluation and their funding will be 'ring-fenced'. ■
www.homeaccess.org.uk

America to boost broadband access

Salimah LaForce

Last month the US government published a plan to boost the use of broadband after the country fell from 1st to 15th place internationally in terms of the percentage of households with broadband.

Only around a quarter of people on low incomes use high speed internet connections in the country. They include 23m Americans with disabilities who currently do not subscribe to broadband.

Connecting America: The National Broadband Plan, compiled by the Federal Communications Commission, aims to rectify that state of affairs.

The publication covers more than 17 broad topics such as infrastructure deployment, competition, spectrum utilisation, and inclusion.

The plan's recommendations include:
■ Modernise accessibility laws, rules and related subsidy programs.
■ Subsidise the cost of broadband service for low-income households via the Lifeline Assistance and Link-up America programs, originally created to make voice service affordable.
■ Launch a National Digital Literacy Program.
■ Establish an Accessibility and Innovation Forum.
■ Prioritise efforts to increase broadband adoption by older Americans.

"Lack of exposure to broadband, along with a number of other factors, contributes to a general perception among people with disabilities that broadband and broadband-enabled technologies are inaccessible," says the Advanced Communications Law and Policy Institute.

Cost and awareness, combined with limited availability and access to adaptive and assistive technologies, stand in the way of higher rates of broadband adoption by people with disabilities.

People with disabilities would also benefit if web content abided by the World Wide Web Consortium's Web Content Accessibility Guidelines (WCAG 2.0). ■
www.broadband.gov

Siabi wins business Oscar
Dr Nasser Siabi, chief executive and co-founder of assistive technology company Microlink PC, has won a business 'Oscar' from business organisation the Institute of Directors. Siabi was judged Director of the Year for firms in London and the South East with a turnover of up to £25m. Microlink PC provides systems under the Disabled Students Allowance and Access to Work schemes and has recently started providing reasonable adjustment services for large organisations.
www.microlinkpc.co.uk

FAST plugs into user power
Involving users is crucial to developing assistive technology, according to a survey of developers by the Foundation for Assistive Technology (FAST). Two thirds of developers said user involvement was very important. However, nearly a third reported they had difficulty finding appropriate users, especially older ones. The survey will help shape FAST's Technology for All programme aimed at increasing involvement.
www.fast.org.uk

BCS serves an ACE
The British Computer Society (BCS) has set up a network of centres to support learners and trainers involved in IT qualifications such as the organisation's European Driving Licence. The 13 centres, called Accessibility Centres of Excellence (ACE), will provide help and guidance in four categories of impairment: behavioral, cognitive, mobility and sensory. BCS held an national awards event for centres last year.
www.bcs.org

In March, some 5,000 people attended the 25th California State University Northridge (CSUN) conference in San Diego. *Ability* was among them

Delegates shape US access law

The rules that govern Section 508, the groundbreaking US legislation that requires government departments to buy accessible technology, are being re-written.

"They are trying to define what accessibility is and catch up with technology," explained Cynthia Waddell, executive director of the International Center for Disability Resources on the Internet, who was involved in framing the original law.

The US Access Board, which is redrafting Section 508, aims to update the legislation to include newer technology such as real time text, ATMs, mobile technology, electronic books, video and voice texts.

The CSUN conference was the scene of a remarkable exercise in public consultation that saw a hearing in which attendees were invited to respond to a series of questions about the proposed changes.

The Access Board wanted feedback on how sensible the proposals are: how much they will cost, how quickly changes can be made and whether they are practical.

The process of redefining 508 is likely to be lengthy. It has already been going on for longer than a year and any changes are unlikely to see the light of day before 2011.

"Industry resists anything that means they will have to spend money," said Waddell. "So we won't listen to all the comments. However, my interest is in a win/win for everyone. Sometimes we get into battles were people are not fully informed." ■
www.access-board.gov

Veterans spearhead technology charge

Support for veterans – wounded and retired military personnel – plays an important part in the provision of assistive technology in the US.

Over the past 20 years the Computer/Electronic Accommodations Program (CAP) has provided assistive technology to over 85,000 civil servants, including 14,000 service personnel.

In many cases the technology helps them find work through rehabilitation schemes such as the Wounded Warrior Project and Hire Heroes.

"The problems are huge but it isn't a hidden issue anymore. Best practice doesn't work; we are looking for next practice," said CAP director Dinah Cohen.

Captain Ivan Castro, the only blind officer serving in US Army Special Forces, was a keynote speaker at CSUN. He is one example of a serviceman who has benefited from Veterans Affairs programmes.

Blinded three years ago when a mortar shell exploded close to him in Iraq, Castro has learnt Braille and how to use a computer and can operate a screen reader. He uses a barcode reader to pick out his clothes.

Castro, who has run nine marathons since his injury, told delegates that he had maintained a can do attitude despite his difficulties.

He challenged industry to make products faster, reliable and more affordable. "It would be great if you could make them waterproof as well," he quipped.

Sue Martin worked as a trainer at a blind rehab centre run by Veterans Affairs in Birmingham, Alabama, one of ten such centres in the US. "I saw my job of giving any vet who wanted to use a computer a way to use one," she told *Ability*. ■

Erik Williams – who is paralysed from his chest down – hand-cycled 150 miles to the CSUN conference

PDFs are well documented

The accessibility of documents and books was a hot topic at this year's CSUN, if the number of conference sessions run by Adobe was anything to go by.

"Accessibility of documents – particularly PDFs – has become a prime concern," acknowledged CSUN event manager Wayne Fernandes.

Fernandes said features such as 'read out loud', the availability of tabs, the ability to adjust the size of letters, text wrap and controls that adjusted the contrast of documents as evidence that Adobe was nearly there. However, more attention was required on the training of designers in producing PDFs so that they thought about accessibility from the outset.

Adobe is working on major accessibility improvements to Acrobat and Reader, said Andrew Kirkpatrick, Adobe's accessibility head.

"Among the expected improvements are enhanced support for accessibility in PDF forms utilising Adobe's XML Forms Architecture (XFA) and accessibility support for PDF Portfolios are important for many users," he said. ■
http://blogs.adobe.com/ accessibility/

Smart house opens the door to learning disabled

Hft, the national charity for people with learning disabilities, has developed an interactive one bedroom 'smart house' to show how assistive technology can be used to support people with learning disabilities in their homes.

The 38sqm house consists of a living area, bedroom, bathroom and kitchen and features a front door that uses a fingerprint lock rather than keys and a video entry system.

Each room has been kitted out with gadgets that show how technology can help. They range from simple voice prompts reminding people to close the fridge door to movement sensors that detect when someone has left their bed and switches the bedside light on.

Hft plans to install the smart house at various venues this year after more than 2,000 visitors explored the display at the Learning Disability Today show.

"The Smart House has done exactly what we set out to achieve and that is to bring to life how personalised technology can give individuals with learning disabilities more independence," said Steve Barnard, director of information systems at Hft.

"It also gives their families peace of mind knowing that there are things out there in the market that will help to keep people safe and secure." ◼

YouTube rolls out automatic captioning for deaf people

YouTube has introduced automatic captioning designed to allow people with hearing impairments to read what is being said on the tens of millions of videos hosted on the site.

Last year the company tested speech recognition on material from a handful of US institutions. Now Google is rolling the service out on all the English language videos it hosts.

The process is going to take a while. A brief search by *Ability* reveals that only a small proportion of videos have the service available as yet.

Users can activate automatic captioning by either pressing a button marked 'cc' on the right hand side of the control bar or by selecting a button marked 'options'.

Video owners have been able to upload transcripts of their material for some time and have them synchronised with speech. Now they can also download files containing automatic captions to correct and edit them.

Some deaf people have been critical of the accuracy of the captioning and Google acknowledges that it can go awry, although generally automatic captioning is better than nothing.

With improved technology, automatic captioning could be a real boon for deaf people.

"This is huge," said Ken Harrenstien, an engineer on the captioning project team. "It is what I have dreamt about for so many years. The fact that you can now go on to any video online and expect to see captions is unbelievable and the fact I had a part in this is great." ◼

www.youtube.com

It could be you…
Berkshire County Blind Society has won £94,233 from the Big Lottery Fund to develop training in computer skills, confidence building and leadership as well as a buddy system and home visits. The Society is one of more than 30 groups representing disabled groups to benefit from the latest £9m handout from the Lottery.
www.biglotteryfund.org.uk

Citizens Online fixes the web
Citizens Online has proposed a project called Fix the Web to provide space online where disabled people can report accessibility issues and have volunteers solve their problems. Fix the Web would also alert web developers as to where they were going wrong. Coordinator Gail Bradbrook has appealed for help in getting the project off the ground.
gail@citizensonline.org.uk

Smart living from Phoneability
Phoneability, the charity that looks at technology for disabled and elderly people, is organising a seminar called Smart Living on June 15 in London about how buildings might be better designed to support disabled people in future. Phoneability argues that there is an unmet need for integrated systems with a consistent user interface and plans to bring builders, architects and disability organisations together to discuss the issues. Residents of smart homes could benefit from telecare and transport information systems that might, for example, tell them when their bus was coming.
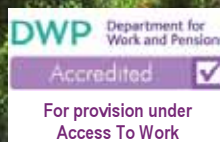**www.phoneability.org.uk**

AbilityNet promises dragons that it will expand its helpline

Dan Jellinek sees Digital Inclusion delegates take the pledge in a wine cellar

At the fifth national Digital Inclusion conference in March, held in the unlikely surroundings of the cobbled wine cellars of London's 'Vinopolis', the most senior representative present of the disability IT community was being diplomatic.

Disability issues had been in general well-represented on the agenda of this wide-ranging national event, which covered everything from access to broadband to wiring up social housing.

AbilityNet's head of accessibility services Robin Christopherson told *Ability* in a quiet moment between workshops. "Disability has been well reflected in the work streams – I am satisfied there has been a significant centralising of the issue, and it is not just seen as a bolt-on, something they have to do."

However, problems remain with widely differing levels of awareness of the exclusion faced by many people with disabilities, said Christopherson.

"There is still a real variation of awareness about the requirement for accessibility. And there is a funding disparity – you can get money for a hearing aid or a wheelchair but not a keyboard or a mouse, or software."

Funding is available to help people in employment with the technology they need, but this is a catch-22 situation, he said: how can you get employment in the first place in the modern world if you are not online?

A dragon's-eye view

One of Christopherson's roles at the event was as one of a five-strong panel of experts featuring in a *Dragons' Den* style workshop session, one of a series in which delegates were invited to offer pledges on behalf of themselves and their organisations.

The pledges were intended to further the event's four main workstreams – 'digital government for all'; 'digital skills for all'; 'health and wellbeing' (the workstream covering disability issues, sponsored by the national health website NHS Choices) and 'social housing plus'.

AbilityNet's Robin Christopherson

Proposers were then cross-examined by the panel, albeit in a somewhat more gentle style than the TV programme of the same name. The top five in each session were selected by the dragons to present back to conference chair, in one of the closing plenary sessions. All pledges were also passed on to the new Office of the Champion for Digital Inclusion, former dot.com entrepreneur Martha Lane Fox (http://raceonline2012.org).

As one of Christopherson's colleagues – Diana Robinson, head of marketing at AbilityNet – was present as a delegate, the charity was represented on both sides of this process, and its own pledge emerged as one of the key undertakings to be selected by the dragons for public approval.

AbilityNet's pledge was to work with intermediaries such as NHS Choices and Age Concern to expand use of its free helpline and other support services such as fact sheets to help people with disabilities access and use their PC.

Confident under pressure

Under questioning from the dragons, Robinson said she was confident its helpline could cope with any extra demand, and said it could also be made quicker and more responsive, though this would require extra funding.

The national helpline (number: 0800 269545) is currently staffed by two full-time technical support workers in Warwick, who handle queries both by phone and email.

Other pledges on health and wellbeing voted forward to the chair included that Age UK will commence an outreach programme to promote use of digital services by older people in care homes; and the Alzheimers Society will use its expanding dementia advisor service and online presence to highlight local digital inclusion.

Overall, the Fifth National Digital Inclusion Conference, with its focus on high-level, non-technical addresses by Prime Minister Gordon Brown, the leaders of the other two main UK political parties and Martha Lane Fox, did not have a great deal to say on the detail of access to technology by people with disabilities.

Lane Fox's office is expected to have more to say on this topic shortly when it publishes a response on the accessibility aspects of the government's Digital Britain policy. Until that time, AbilityNet's pledge to expand its national helpline is the clearest new pledge to emerge from the wine cellars of Vinopolis. ■

www.nationaldigitalinclusion conference.co.uk

Welcome to a new, regular page with news and discussion of the technology issues that affect disability professionals

NADP steps into row over student payments

The National Association of Disability Practitioners (NADP) has stepped in to the row over the £91m Disabled Students Allowance (DSA) scheme by offering to train Student Loans Company (SLC) staff in the needs of disabled students.

Up until January 2010 only a quarter of the 17,000 applications for DSA payments had been paid, taking an average of 20 weeks, according to a report by the National Audit Office, the parliamentary spending watchdog.

The SLC, which took over the DSA from local authorities last year, has announced it will be taking on an extra 200 people to deal with the backlog and in processing next years' claims.

The NADP has offered to train them in disability legislation and to explain the social model of disability.

A report in March by the National Audit Office concluded that disabled students had been deterred from starting or continuing with their higher education by delays in supplying assistive technology and other support.

Cases such as the student who had to justify why undergoing 10 hours per day of kidney dialysis might affect her studies have enraged professionals working with disabled students.

Under DSA rules students need to provide medical evidence of their disability before assessments are carried out. In many cases the evidence has been challenged, further delaying the award of allowances.

There are four stages to processing allowances:
■ The student applies to the company, with medical evidence.
■ If deemed eligible, the applicant is told to attend a centre which assesses their IT needs, obtains quotes for products and services, and sends a report to the company.
■ The company decides what support to award.
■ The student or supplier submits an invoice or receipt to the company.

A recent proposal to offer the same support package to all students diagnosed with dyslexia has also bought strong reaction from the normally consensual NADP.

"DSA recognises that every student is an individual and any plan to move away from this towards treating all students with dyslexia in exactly the same way because they have the same diagnostic label is clearly disablist," says NADP president Matt Fraser.

"I sincerely hope that the Students Loans Company does not intend to take this backwards step."

The current problems are likely to spur the introduction of assistive technology on campus systems, although this will not help students who need adjustments to their laptops. Some universities have been lending money to students to buy equipment and services.

"Progress has been made (in clearing the backlog)," said NADP chair Nicola Martin. "You have to take your hat off to the assessors. They are working flat out."

The Department of Business, Innovation and Skills expects the Students Loans Company to save £20m by 2011 on the cost of running loans compared with local authorities. ■

This page is sponsored by the NADP, whose members are entitled to a 10% reduction on subscriptions to Ability.

Arts are more attractive than IT

A study by the University of Scotland suggests that students with disabilities are twice as likely to study the creative arts as technical subjects such as IT.

Researchers found that across the UK, 4.6% of students doing IT-related degrees have disabilities, compared with 9.4% in creative arts and design and 7.7% in history and philosophy.

The large number of students with dyslexia may account for the trend, says the paper. "This specific group tends to choose courses based around a more visual nature rather than courses that involve a lot of note-taking lectures and written exams," it concludes.

The Glasgow School of Art

The three institutions with the largest number of students with disabilities are all creative schools: Glasgow School of Art (17.7%), the Royal Scottish Academy of Music and Drama (12%) and Edinburgh College of Art (11.3%).

"People often assume that disabled people choose to study IT courses due to technological advances that mean they should be able to pursue a career in IT. This assumption is not supported," say the researchers. ■

Raising the bar on augmentative and alternative communication aids

The heirs of Steven Hawkins will demand a new generation of affordable and user-friendly aids, says Simon Stevens

Communication aids, or augmentative and alternative communications (AAC), as they are sometimes called, have been around for many years for people with speech impairments or who are non-verbal.

The best-known user of a communication aid is, of course, Steven Hawkins, who has been parodied many times for the electronic speech his device produces. While these aids give an important voice for people who would not otherwise have one, they do come with difficulties that are not immediately apparent.

The first problem is to actually get your hands on a communication aid, which it is not as simple as it should be. These devices are very expensive and far beyond the budget of the majority of their users.

While some users may be able to self-fund from compensation or from their savings, the majority are dependent on local health services to provide a device. And so the question of their eligibility for a grant is a major hurdle: limited resources mean not everyone who needs a communication aid gets one!

Square peg, round hole

After years of managing, or rather coping without a communication aid, I recently went to my local speech therapy service to see if I could get one. The first thing that immediately became obvious was that there was not a specific service that directly applied to me.

There were services for people who have no speech, for people with newly acquired impairments and for people with learning difficulties, but nothing specifically for adults, like me, with long term physical and speech impairments.

In my case, there was clearly a need

Simon Stevens is a disability consultant and trainer and has cerebral palsy.
www.simonstevens.com

and I was prepared to chip away and jump through all the hoops over a two-year period. Finally, I took delivery of a new Lightwriter on indefinite loan.

The Lightwriter assists me in a whole range of situations that allow me to participate in society. Other people need a communication aid for medical reasons or in order to function day-to-day, rather than to work or for other social benefits it may bring.

While the newer communication aids are quite impressive in what they can do – my Lightwriter, for example, can text – dependency on a device as the only form of 'verbal' communication can cause its own problems.

I would argue that the speed of devices and the level of vocabulary available can significantly affect the development of social and language skills, particularly for people who have always been non-verbal.

In addition, the need to get key

messages across in an effective timeframe often makes someone appear direct and unfriendly.

Another service that is a boon for people with speech impairment, as well as those who have hearing difficulties, is Text Relay, or Typetalk as it used to be called.

Slow, but a huge help

Text Relay has been around for a number of years. Users dial a prefix of 18001 on the number they wish to contact using a textphone or a PC with special software. If the number is not connected to a textphone or is not able to receive text calls, the call is answered by an operator who acts a middle person translating text to voice and vice versa.

While this can be slow at times, especially for people with any difficulties typing, it is an extremely useful service that I believe not enough people with speech impairments are aware off or indeed are using: Text Relay is normally marketed as a service specifically for deaf people.

It is often the case that technology will benefit people beyond the group it was originally intended for. It is also difficult to find out about all the services that may be useful to people with speech problems despite the wide range of information now available on the web.

I think that while communication aids are vital for many people, it is an area that requires much further development to enable users to have affordable and user friendly solutions to what should be a right: the right to have a voice and to converse with others in a manner that is inclusive.

As a younger generation of Stephen Hawkins sound-a-likes begin to claim their independence, I hope we will also see a whole new generation of communication aids that meet their high expectations. ■

An author who speaks to her readers

Sandra Howard explains how would-be writer Dee Blick turned to technology to complete her book when RSI struck

RSI sufferer Dee Blick (pictured), recently fulfilled a long held ambition of writing a book – despite virtually losing the use of her hands.

Dee, from Horsham, West Sussex, is among more than one million workers afflicted by Repetitive Strain Injury (RSI) in the UK. One of the most common causes of the condition is the intensive use of the keyboard and mouse.

Just when Dee thought she would have to abandon her dream, the chartered marketer managed to complete her book, which gives marketing advice to small businesses, with the use of cutting edge speech recognition technology.

"I've always loved writing. Even as a small child my biggest dream was to write a book of my own. I felt it would be a great achievement."

But after starting her own marketing business four years ago, her ambition had to be put on hold as she found herself working twelve-hour days, typing press releases and planning marketing campaigns for small businesses in her local area.

"But, about a year ago I found myself browsing around a book shop and hit on an idea for a book. I found there weren't any easy-to-read marketing books for the types of businesses I deal with."

Dee had found a gap in the market for a meaty, but simple to use, marketing book – now extremely relevant, given the downturn in the economy.

"I felt amazing," she says. "I could finally obtain my dream. So, imagine the horror when I found myself suddenly unable to hold a pen or use my computer."

Dee had been experiencing nagging pains in her shoulder, neck and right arm for several months.

"At first I thought it would just go away, but then it got to a stage when it was constantly aching. I had heard of RSI and knew I had most of the symptoms, but I was in a state of denial. It really did cause me an immense amount of stress."

She visited a specialist who said he didn't believe in RSI and insisted that she would feel better once she improved her posture, did some hand and arm exercises and took regular screen breaks.

"I did all those things but with very limited success," says Dee.

"It's like telling a cancer patient to eat healthily and everything will be alright.

"I struggled on, running my business the best I could. Then, the hand of fate intervened. I found myself driving to see a new client who had been referred to me, and praying that he didn't actually want me to do any work for him – how ridiculous is that!

"I just felt in so much discomfort. I was taking the maximum dose of painkillers each day but these were only a short term fix, and the pain came back the moment I stopped taking them."

The company Dee visited was speech recognition specialist Hands-Free Computing. Lawrence Howard, the managing director, demonstrated how to dictate a paragraph of text at normal speaking speed.

"Lawrence explained that I would be eligible for a grant from Access to Work, a Government funded scheme, run by JobCentre Plus."

The Access to Work assessor recommended a variety of workstation changes including an adjustable chair, a foot rest and a Dragon NaturallySpeaking software package. Access to Work paid for this, as RSI is a recognised disability under the Disability Discrimination Act.

"Speech recognition has truly been life changing for me – I really thought I was at the end of the line with not only my working career, but my book writing dream as well.

"I had two days training and picked up the fundamentals quite quickly. The trainer went at my speed and was very patient and knowledgeable.

"Now it's second nature to me and it has completely restored my faith in my capabilities. I managed to write 71,000 words of my book without writing at all."

Dee has won five awards for her writing for small businesses, and her book has just become a bestseller on the Amazon website.

"It makes me laugh when people comment about my book. They regularly say: 'Dee, I feel as if you are speaking directly to me.' Little do they know that I really was." ■

Powerful Marketing on a Shoestring Budget for Small Businesses – *by Dee Blick £13.99, published by AuthorHouse.*

Useful contacts:
Hands-Free Computing www.hands-free.co.uk, RSI Action, a campaign group rsia@rsi.org.uk; Access to Work, grant scheme run by the Department of Work and Pensions www.dwp.gov.uk

The shape of things to come

Gary Flood surveys this year's must-have gizmos and asks how accessible they will be

As an industry obsessed with constant upgrades and a fetish for the latest and greatest, it's no surprise that IT is always promising even better new toys and technologies for us to drool over.

This is even more true these days, when consumer electronics and fashion are a decided part of the mix. But cool and marvellous as the next wave of gadgets doubtless is – to what extent have its developers taken disabled users into account and asked if there's anything they might need?

As a rule not, believes Robin Christopherson, head of accessibility services at AbilityNet. "Manufacturers always design new devices for the 80% – never the 100% of us," he told *Ability*.

This seems especially true of the 'class of 2010' gizmos and electronic wonders being prepared to drain our credit cards over the course of the year – many of which risk ending up as expensive paperweights to the 'non-standard' users out there.

Plainly, some devices are not going to work for everyone. A 3D TV is as irrelevant to a vision impaired person as the HD ready variety and no matter how many downloaded 'chewns' your iPod can carry, if one is profoundly deaf, not much use, and so on.

Not for everyone

But so far as mass market devices are concerned (see box) – the ones that promise to bring the benefits of leading-edge innovation out of the lab and into the everyday world – has the disabled technology user been adequately considered?

At the outset, let's acknowledge that some readers – as with any technology – will be prepared to cope with limitations and find workarounds with a new device if they feel they can get benefits.

"Many disabled IT users are on the forefront of any technology wave if they feel it's worth it," says John Gill, an independent accessibility consultant, who also feels that wider availability of broadband will also make it easier for a broader range of input styles to be made possible.

But for the majority of disabled IT users looking to the 'hot' products sections of the magazines, it's a very mixed picture. There have been some downright retrograde steps around ebooks, for instance, after US publishers won a legal fight stopping text-to-speech on these devices in a bid to protect their lucrative audio book market.

Equally, many blind people are very unimpressed with the Chrome OS from Google, which seems to have no interest at all in supporting screen readers.

"New technologies need to learn from past mistakes," warns David Banes, director of development at AbilityNet. "Although these devices offer exciting opportunities and new solutions to old problems, they also bring with them some new barriers.

"The aim remains to see universal design applied to new products we don't always see that being effectively applied; certainly in the case of new 'solutions' such as ebook readers. We need a diversity of devices being available to accommodate both needs and preference."

More important developments

In any case, says Guido Gybels, technology director of RNID, there are more important developments than the detail of yet another new mobile phone or a new gaming machine.

"The underlying trends of convergence, more processing power and an ever more connected experience are the drivers behind a more capable and more ambient technology all around us, blending with our environment, our clothing and, increasingly, our biology," he points out.

A more connected world, he continues, means that specialised access technologies could become part of a user profile stored online in the cloud and therefore available wherever you go, on whatever device or platform you might need them.

"That is the true story that an OS like Google Chrome tells us. So the good news is that, in the longer term, there is a great opportunity to create a more inclusive information society. The bad news is that this will happen a lot slower than technology itself would allow for."

Gybels points out that it is not just a matter of the economic cost, it's also the fact that replacing (or, more likely, upgrading) existing end-to-end solutions requires a great many changes all along the delivery chain.

A smooth transition

The changes are further complicated by the need to keep legacy products and services going while newer ones are introduced.

But at least some of these new technologies and products are exciting genuine favour. One device that is very much coming

What's chic for geeks in 2010?

Ebooks
Ebooks are all the rage and with the Amazon Kindle selling so well and with the new Barnes & Noble Nook on the way (if only for Americans so far), new colour screens and huge memory capacity have won many converts. But many unsighted people are cheesed off with the stripping of the text-to-speech functionality recently and give them the thumbs down.

Android/Chrome
Search giant Google is branching out with its new Android operating system for the smartphone market and it is also trying to knock Microsoft off its perch with its Chrome browser-cum-operating system (due around November). But disabled users with sight problems decry both systems' lack of support for their needs.

Games on Demand
How do you fancy playing immersive computer games but not shelling out for an Xbox 360 or Playstation 3? New players like OnLive (www.onlive.com) turned a personal computer into a powerful games machine, while the company's MicroConsole allows you to access the same service on your TV (www.playcast-media.com).

New forms of internet access devices
There's a lot of interest in the new Chumby device (www.veda.co.uk) – a small, padded touch screen computer set up to run thousands of downloadable web apps that is said to be very easy for all sorts of users to operate. And it's also easy to use.

Apple iPad and other Tablets
The successor to the iPod and iPhone, the iPad (not yet available for purchase in the UK) has excited a lot of friendly comment from accessibility specialists, who applaud Apple for a much more supportive approach to the needs of this market than rivals. Too big a phone, too small a Notebook? Decide for yourself later this year when it finally goes on general release. Other Tablet PCs, such as the ICD Vega, are also in the wings.

Natal
Developed from military use, Microsoft's Natal is an Xbox 360 add-on that uses a heat-sensor to track 48 points on your body, letting it understand complex gestures as well as recognising faces and voices. Hailed as a revolution for gaming, will it also herald a new era for gesture control of other IT boxes?

Wireless USB
The next step in living room wireless connectivity and claimed to be better in different respects than both Wi-Fi and Bluetooth, wireless USB is supposedly the end of tangled wires at the back of things. Yes. Really. Again.

Resources
AbilityNet maintains a playlist of new and emerging technologies at www.youtube.com/abilitynet

through as a welcome item is the new Apple iPad.

"The combination of an intuitive, touch screen iPhone-style user interface combined with a rapidly growing range of apps that don't cost the earth has been a very welcome development," says assistive technology expert Mick Donegan of SpecialEffect.

"Some excellent AAC apps such as Proloquo2go make communication aids available to a much wider group of people. Not only is the price a good deal more attractive than dedicated speech output devices of equivalent levels of function but, just as importantly for many, it is a mainstream device rather than

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something that stands out as being 'different'.

"The fact that many existing iPod communication apps will run on the iPad is extremely good news and, no doubt, they will be further developed to capitalise on the larger screen size."

Another item that people in the community like is the X-Box interface Natal from Microsoft, which Donegan sees as having "masses of potential". "It provides a versatile way of opening up existing games to people with a range of disabilities via a vocal joystick, head-tracking and limb-tracking which are used to emulate traditional joy pad controls."

New connectivity and access ideas such as Natal offer interfaces that combine facial recognition, voice input and gestures, making for a far more intuitive approach to working with technology.

Some hope that the Natal will be programmed to respond to gestures as subtle as eye movement: perhaps, wonders Donegan, it could pave the way to the "first commercial, cheap, reliable and accurate gaze-tracker!"

Note that Gill is a sceptic here: "I think gesture recognition, though long of interest to the disabled community, still has some big hurdles ahead of it. It's a long way before it could be up to handling sign language, for example."

Disabled people like doing all the same things as able-bodied people – including computer gaming. The concept of 'Games on Demand' is intriguing here.

A dominant standard, if fairly open to third party hardware development (along the Apple App model?) could bring many more accessible controllers that don't go out of date so soon.

Equally positive, say some, is Wireless USB; successfully used, disabled users will find that they are freed of cables and able to use technology on demand and in a more fluid manner.

Love it or hate it

Put it all together, the verdict seems to be that for everyone who hates the Google Android OS, say, for one set of reasons, there are accessibility experts who have only kind words for it. In the end, maybe it isn't possible to design for the full '100%' of the market – someone with one sort of challenge may reject a device that opens doors for another user.

It is therefore worth ending on this note: until these products are in the shops for proper trials, who really knows what they are capable of?

So don't listen to either us or the hypesters. Test these items for yourself and see what works for you and your specific set of abilities.

You may well be pleasantly surprised. ■

The computer-aided philanthropist

How business executive Ian Karten gave thousands of disabled people the chance to acquire IT skills

The sight of a 25-year-old quadriplegic man controlling a computer with his chin set businessman Ian Karten on an extraordinary mission to help disabled people learn about IT.

Karten has devoted the past 13 years and £7.5m of his own fortune to setting up a network of Computer-aided Training, Education and Communication (CTEC) Centres in the UK and in Israel where people with disabilities ranging from schizophrenia to cerebral palsy can acquire IT-based skills.

"To be human is to communicate," he explains. "The young man I saw was composing a letter and he looked pleased. I thought it would be wonderful to educate people to get computer-related jobs."

As he looked into the possibilities, Karten came across a catalogue with details of hundreds of pieces of assistive technology. "With that information I saw it would be possible to set up a centre to train people how to use technology, but to my amazement there wasn't anywhere."

First centre opened in 1997

The first CTEC Centre in the UK opened its doors at Ravesnscroft Village in Berkshire in 1997. "I wanted to set up enough centres to give easy access to IT training to anyone in the country," says Karten.

This year the 90th establishment swung into action at the National Centre for Young People with Epilepsy. Eighty CTEC Centres have been established in the UK, while 10 have been established in Israel.

Thousands of students have passed through their doors – no one is quite sure how many – not only learning to use assistive technology and become IT literate, but also becoming de-institutionalised in the process.

Karten, who will be 90 this year, explains that his charity – the Ian Karten Charitable Trust – concentrates on funding the cost of equipment rather than the running costs of a centre.

"The government is very generous in paying for the teaching and ongoing costs, but what the government does not do is to provide money for technology; and charities do not have access to capital."

The majority of CTEC facilities have been set up in universities and colleges of further education, the remainder in charities that run day centres or centres for older people.

The size of a CTEC Centre varies, catering from between 10 and 30 trainees. Some specialise in a particular disability, others cover a range of disabilities.

Ian Karten: the founder of 90 training centres

"I wanted people to be proud of being trained in a CTEC Centre. It is not easy for people who are disabled to get up in the morning and come into work," says Karten.

Many Centres are strongly focused on vocational training, while others concentrate on providing training in communication and life skills for people with cognitive disabilities.

Karten is still closely involved in vetting applications for grants. When *Ability* visited him at home in Surrey, the Trust was considering proposals from three organisations.

When would the network of CTEC Centres be complete? There may be room for a further 20 centres in the UK, bringing the number up to 100, Karten estimates. Some areas of the country, such as the south west, are not as well covered as others.

"Disabled people now ask for access to technology because they know it will make a big difference to their lives," says Karten, who received an MBE in 1999.

"In the past people with disabilities had in most cases no access to a high level of education and for a very long time you could say nothing could be done for people with serious disabilities."

At CTEC Centres students are prepared for being able to work: learning how to handle money, acquiring computer-based skills, such as designing leaflets, and practicing office routines.

"It fosters independence and motivates people to make more of themselves, enabling them to overcome rejection.

Images produced by Treloar Enterprise Printing Solutions create an illuminated window

"These days it is possible to train people with disabilities to have a good quality of life and train them to make a living."

Karten's vision in action at Treloar College

Treloar College, Hampshire, founded by a Lord Mayor of London in 1907 as a school for disabled boys, aims to prepare its 160 mostly resident students for adult life.

Three Karten funded activities, which last year received some £150,000, play a vital role in college life: a centre for business administration studies, a printing facility and a fully equipped truck that carries out technology assessments.

A group of young people studying for an NVQ in business administration banter over their workstations as they design leaflets, brochures and flyers.

The equipment they use, which includes 14 PCs, a photocopier and a brand new digital colour printer, has been supplied by the Karten Trust.

The students have access to alternative keyboards, joysticks, touch screens and speech synthesisers. But many of the adaptations are minimal, such as a document stand for a franking machine, height adjustable tables and a homemade device for hitting two buttons at once.

"Independence is very important," observes Jerry Cullum, who runs the CTEC Centre in Treloar. "In my opinion a student needs to be in charge of their success or failure and the support they receive. Often that is very difficult because up until now they have been passengers in their own education."

Over at Treloar Enterprise Printing Solutions another group of students are discussing their work running a high quality Hewlett-Packard printer. The printer and Eduprint software turns digital photographs into high quality prints on glossy paper and canvas. It can also apply images to objects such as mouse mats, coasters, cards and key rings.

The enterprise, which started six months ago, is run as a business with students taking orders, operating the equipment, producing invoices and keeping accounts. Each member of the seven-strong team has their own role: finance, marketing, production, health and safety, quality control and managing director. Some of the orders are quite large, such as a recent one for 480 coasters for the City of London. But the drag and drop software is user friendly, say the students, and they enjoy learning how to run a business.

Schools and colleges in Hampshire are also benefitting from the UK's first mobile assessment and therapy service for disabled students, funded by the Karten Trust.

Therapists from Treloar tour schools in the the region with a trailer full of state-of-the-art equipment that allows them to assess students' capabilities and recommend the appropriate technology.

The last boat to Britain

Ian Karten's early life was spent grappling with the chaotic events of Europe after the First World War. Born in Vienna, Austria, his parents had Polish citizenship but moved to Germany in the 1930s. Studying in English at a German school, Karten won a place to read engineering at London University.

In 1939 he caught the last boat across the channel to Britain, leaving his family near Cologne. He served as a technology officer in the RAF during the war working in Bomber Command. After D-Day he was involved in searching for evidence of German nuclear weapons research in Denmark.

When the war ended he was reunited with his mother who miraculously survived the holocaust. After he was demobbed he joined a near-bankrupt medical technology company called Multitone, which later pioneered pocket radio paging. For 15 years he was the chairman and chief executive of the company.

He used the money he made from the sale of the business to found the Ian Karten Charitable Trust in 1980. Initially, the charity funded scholarships for students

During World War II Karten served as an RAF officer

after Karten had been similarly helped during his impoverished student days.

"While I was a student I found it difficult to find the £30 for the fees. So, the trustees gave me a free place. I then made up my mind that one day when I could afford it I would set up a charity to help students with scholarships.

"With a charity there are so many good causes; you can put a bit of money into this and a bit of money into that but it doesn't add up to anything significant."

An inveterate target setter, Karten's initial goal was to award 1,000 scholarships. He ended up handing out 3,000, worth over £1m in total. ■

Print to speech on the go

Laurent Cadet de Fontenay compares the KnfbReader (left) and TextScout (right): two software packages designed to read text aloud using a mobile phone

Over the past year a number of products have come onto the market that use a mobile phone camera to capture print and turn it into speech.

For a blind person they sound like a dream come true: technology that promises to let me read anything, anywhere.

I wanted to know how well they did the job, so I borrowed the knfbReader Mobile from Sight and Sound and the TextScout from Elumo (both cost £695) and tried them out in a variety of situations.

The manufacturers of these two products have taken very different approaches to enabling a mobile phone equipped with an adequate camera to perform Optical Character Recognition (OCR) on a text image such as a document, a restaurant menu or the address on an envelope.

The knfbReader Mobile uses a standalone architecture, with all functions being performed by the mobile phone itself, while TextScout opts for a client-server architecture.

The mobile phone acts as client and connects via the internet to a remote server, where the OCR is carried out. These two approaches certainly have a significant impact on the use and usefulness of these mobile readers.

The standalone approach taken by the knfbReader Mobile means that you do not have to connect to the internet or rely on a central server's whims.

And there are no data charges for sending pictures of text over the internet, which can be costly depending on your data plan and the amount of reading you do, as the high quality images required for OCR are bulky.

However, this comes at a cost:

- Due to limited processing power on a mobile phone, the manufacturer has had to choose between speed and accuracy of recognition.
- The ability to read multiple pages effectively is hampered by the fact that the unit starts reading the beginning of text on a page while recognition is still in progress, in order to save the user some time. This means that, hypothetically, the knfbReader cannot be used to scan through a number of pages quickly at a meeting or to scan a book for later perusal without waiting for inordinate lengths of time.
- Intensive processing by the knfbReader leads to higher demand on the phone's battery.

On the other hand, the client-server architecture used by TextScout leverages the mobile phone's ability to connect to the internet to shift the burden of processor-intensive OCR to a central server. Connections to the internet can be established through your mobile provider's network or to a fast broadband connection using wireless LAN.

By making the OCR process server-based, TextScout theoretically speeds up the delivery of completed results to the user while also delivering superior recognition quality due to the greater processing power on the server, which can recognize text in an image in a matter of seconds.

This is much faster than the recognition process performed directly by the mobile phone, which could take up to a minute for a page with large amounts of text (although the knfbReader compensates for this by starting to read as soon as the first chunk of text on the page is recognised, which can be as soon as 10 seconds). Its client-server based architecture also means that TextScout can update itself automatically as soon as newer versions become available.

Retrieval of recognition results stored on the server is also possible from the user's PC, either over the internet or via email, adding a layer of flexibility.

While the advantages discussed above are considerable, they do come at significant cost:

Pictures taken at the required quality for effective OCR are large and take an inordinate length of time to transmit over a slow internet connection, cancelling out the fast processing time.

In circumstances where mobile connectivity to the internet is not available or prohibitively expensive (for example, when travelling internationally), TextScout becomes unusable.

Conditions on the internet fluctuate and although I have not experienced it, problems with the server may occur (it is a computer after all).

With TextScout, reading on the go does entail a financial cost to the user. A data plan, costing at least £5 per month, is required (if a data bundle is not already included in your mobile contract) to avoid paying costly ad hoc charges.

I admire the concept design and ingenuity behind both these products. Although they are not perfect, they do help in the ongoing struggle to remove barriers to information.

Document/Conditions	knfbReader	TextScout	General comments
Train ticket on station platform	Enough information to identify ticket, some time taken for recognition	Better recognition of text on ticket but longer time taken to transmit image due to slower internet connection	Useful application of mobile reader software which could not be accomplished by other technology
Train ticket at home (predictable lighting conditions and background of dark tablecloth)	Fair recognition, more detailed information	Slightly superior recognition, fast results due to wireless connection to home broadband	Superior recognition and near equivalent speed obtained with flatbed scanner and OCR software (TextScout a bit faster)
Various restaurant menus (variable lighting and menu types)	Names of dishes are mostly discernable, though not always matched up with prices in other columns; acceptable speed of recognition, although very slow on fancier menus; awkward to use in noisy places	Acceptable recognition of dishes. Variable speed for results to be obtained due to speed of internet connection. Not satisfactory for multi-page documents in slow connectivity areas	Mobile reader software technology appears not to be advanced enough to provide comfortable reading of multi-page documents in public environments with variable lighting and high noise levels
Checking post in the lobby (various types of envelopes)	Addressee information normally discernable (superior to TextScout); acceptable speed of recognition	Addressee information normally discernable, recognition time-consuming due to slow internet speed	Useful to sort a few post items with fair accuracy, especially if lobby is downstairs; better accuracy on most items obtained with flatbed scanner and OCR software
Reading various types of food packaging (shapes of items affected positioning)	Results detailed enough to discern nature of item and even preparation instructions and ingredients in flat cardboard packaging. Speed is slowed down by pictures. Results consistent and some useful information is extracted	Results obtained quickly due to fast home broadband connection; not always consistent – occasionally reports no information on hard-to-read items where the knfbReader does extract minimal information	Very useful application of mobile reader software for items that cannot be scanned on a flatbed scanner
Books (pages at random from the Bible and academic textbooks) in optimal lighting conditions on dark background	Good recognition, even of unusual names and terms; acceptable recognition speed	Superior recognition accuracy of unusual names and terms; very fast results through home broadband connection	Superior recognition obtained using a flatbed scanner and OCR software. Potentially useful to identify books in a collection
Predicted performance when accessing printed information at meetings	Good recognition, providing some access to textual information (not spreadsheets). Not suitable for quickly locating desired page in large documents – human assistance would still be required	Superior recognition. However, relies on availability of quick 3G or HSDPA mobile internet connection to provide results in good time, which is often not the case	Mobile reader software provides only a partial solution for document access at meetings; due to variability of locations and internet connectivity, the knfbReader is superior for this application

But which one should you choose? Fortunately, 14-day demonstration copies of both products are available. But my experience of using both products may also be of some use in helping you make a choice, depending on your circumstances.

The phone I used was a Nokia N82 with the latest incarnation of the Talks screen reader installed. The Nokia N82 is not the most modern phone to support both applications, but it is adequate for the job and gives a fair idea of what most users could expect to experience.

I tested both the knfbReader and TextScout with a range of every day items under different conditions. Wherever possible, I ensured that lighting conditions remained constant between the use of both products (not a fool-proof exercise, as I only have limited light perception and can only notice large, contrasting changes in lighting conditions).

The table above gives a summary of the different types of items on which both products were used and the results obtained. As a comparative baseline, I also used PC-based OCR software and a Canon LiDE 30 flatbed scanner for certain items, to check the efficacy of the mobile reading packages. ■

www.sightandsound.co.uk
www.elumo.net

Laurent Cadet de Fontenay is an Access Technology Consultant, carrying out assessments for the Department of Work and Pensions' Access to Work programme.

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Adapting Technology ■ Changing Lives

Assistive technology for all

Mark McCusker argues that mainstream manufacturers will adopt simpler technology, cutting its price and changing the way it is used

The assistive technology market is set to evolve into two sectors: one that caters for severely disabled people and a second that provides simpler technology, with broad appeal, that people can use unaided.

Technology such as text-to-speech is already included on some mainstream software applications. However, we anticipate that larger computer technology companies will start building it into web browsers as standard in the next two to three years.

Assistive technology is currently a niche market because it is largely dominated by smaller companies with stronger motivation to support those with special educational needs than making huge profit margins, but it won't stay that way forever.

Once the big players in technology and software have integrated this specialist technology, it will be more common for everyone to use it, regardless of ability. This will be helped by the Government strongly pushing assistive technology into the public domain via initiatives such as the Home Access programme.

Already on the radar of large companies with the capability to deliver assistive technology to the mass market such as RM, Ramesys, Microsoft and Apple, we anticipate a move away from perpetual licensing and towards software as a service. As a result of this, the market will become volume oriented, bringing the price per unit down and making it more accessible to the masses.

Assistive technologies are not just beneficial to those with learning difficulties and can support all pupils – even the term 'assistive technology' will soon become passé.

For example, we work with schools in Kentucky that introduce assistive technologies to the whole class, not just those deemed to have learning difficulties. The teachers and pupils do not consider these technologies as a tool for special educational needs but as technology that will support them and help them learn, like a computer or a calculator.

For a struggling pupil, assistive technologies can offer support and guidance, for a more able pupil they can offer further advancement. Technology that assists pupils with dyslexia, such as text-to-speech functions and advanced spell-checks, can also improve literacy for more able pupils.

Primary schools in particular feel the pressure as pupils are judged on their literacy when they move to secondary education. It is a primary school's role to recognise the needs of those who may be struggling and intervene as early as possible.

Rather than intervening at a certain age, practitioners should look at a certain stage in education – early intervention can help

Some schools provide assistive technologies to everyone in the class

dramatically improve literacy skills and prevent the gap between the able and less able children widening as they progress through education.

This is the critical point when children switch from learning to read, to reading to learn. Young pupils can be engaged with reading at an early age by using assistive technologies that support all three learning styles: visual, auditory and kinaesthetic.

Software that allows children to listen to stories, record themselves, play it back and see the results in graphical displays, appeals to all learners and allows them to easily engage with literacy.

Early intervention and the use of assistive technologies can ensure that any child who may be struggling to make this transition is supported quickly and effectively. It can also help to determine if a pupil is a slower reader or if they have a learning difficulty such as dyslexia by the particular errors they are making.

Assistive technologies should be robust and designed to support people for life, tailored specifically for every stage from early years learning to the workplace. For example, our Read&Write software has several versions that can be applicable to all areas of life and most people we work with use it regularly.

It can be difficult in a working environment for people with a hidden disability, such as dyslexia, to self-certify themselves and they often believe that they are just slower at completing work than their colleagues.

Employers need to be educated further on the subject to help them understand the benefits to their business: a better equipped and supported employee improves their ability, confidence and essentially the company's productivity and profitability. The Government's Access to Work initiative offers advice and funding for employers and employees who need support in the workplace. ■

Mark McCusker is chief executive at Texthelp Systems, a company that recently won a contract to supply assistive software to the Home Access programme, which provides free laptops to disadvantaged children.

ClaroRead gets an update

Claro Software has updated its ClaroRead writing support software.

ClaroRead version 5.5 includes new features that allow users to check the spelling and get a dictionary definition of any word from any PC application.

The ClaroCapture research tool also helps users who are writing reports, presentations and other documents to collect text, images and similar material in a single project file.

ClaroRead standard costs £129, ClaroRead extra weighs in at £159, while the premium version is priced at £199, all exclusive of VAT.

The company also recently introduced mind mapping software called ClaroIdeas. This allows users to create 'ideas maps' that focus their thoughts and aid them in planning reports, essays and revision.

A home version costs £58 plus VAT and the corporate version is £88 plus VAT.
www.clarosoftware.com

Cross platform Mobile Speak 4

Code Factory has introduced Mobile Speak 4, a screen reader that can be used on both Symbian and Windows Mobile smartphones.

Mobile Speak 4 has touch technology that allows users to control touch screen phones such as the Nokia N97, the HTC Touch Pro 2 with traditional keyboard shortcuts as well as touchscreen gestures and commands.

The software has a choice of three voices from Acapela or Loquendo and also supports devices running under the latest operating systems: Windows Mobile 6.5 and Symbian S60 5th Edition.

"The mobile phone market is changing rapidly. Mobile Speak 4 is Code Factory's answer to the future of accessibility. Mobile Speak 4 is everything our users have been waiting for, it will take you to another level of experience, and I can tell you, you will never look back." explains Eduard Sánchez, Code Factory's CEO. "Mobile Speak 4 is one year of hard work. Mobile Speak 4 is 15 dedicated people working full time for

you. Mobile Speak 4 sets new and higher standards for accessibility. Mobile Speak 4 is revolutionary."

On Symbian, Mobile Speak 4 also brings support for Quickword to edit and read documents by character, word, sentence or paragraph, as well as for Fring, the software that makes free voice over IP (VoIP) calls and chat on instant messaging.

On Windows Mobile, Mobile Speak 4 sports Internet Explorer support and allows users to navigate by headings, links, forms, etc, as well as search for text, and add bookmarks to web pages.

Mobile Speak 4 is available from Sight and Sound in the UK.
www.codefactory.es

Tips from Shaw Trust

Almost eight million adults – nearly one sixth of the UK population – have impairments that make it difficult to access or carry out transactions on a website, according to research commissioned from YouGov by charity Shaw Trust.

Shaw Trust, which provides a web testing service for companies that employs disabled people, has published a series of tips for IT managers to help them meet their obligations under disability equality legislation.
www.healthyworklife.org.uk/ web_accessibility

Online directory

DotComUnity has rolled out an online directory that provides information on support services, legal matters and finance.

The site also contains details of sports, social activities, drama workshops, holidays and disabled dating.

A member's area allows events and services to be reviewed providing feedback for others. Visitors can also rate the 25,000 providers listed on DotComUnity.
www.DotComUnity.co.uk

All change at Dolphin

Dolphin Computer Access has released a free upgrade aimed at all version 11 users of its products.

The upgrade, described as "extensive

and far reaching" by the company, covers SuperNova Reader Magnifier, Hal Screen Reader, Lunar Screen Magnifier and LunarPlus Enhanced Screen Magnifier.

The latest version – 11.5 – includes support for 32 and 64 bit editions of Windows 7, and re-engineered support for Microsoft Word.

This has resulted in faster, more robust performance in large Microsoft Word documents and 20 new quick navigation keys for moving around inside a Microsoft Word document, says Dolphin.

Other changes include "meaningful" announcements for 50 of the most popular Microsoft Word hot key functions such as bold, underline, italics and text alignment, improved Spellchecker support and added intelligent tab key announcements.

Version 11 users will receive the upgrade via the Dolphin internet updater found in the Help menu of Dolphin software.
www.YourDolphin.com/SuperNova

Software helps with reports

R2W has launched the Spark Report Writer to help dyslexic people marshal their ideas when writing reports at work.

The £199 program enables people to collect and organise their thoughts in a visual way, choosing their own shapes and colours to represent ideas and working with text, hyperlinks and images.

Spark Report Writer allows a person with a non linear learning style to capture ideas, structure them and keep the link between the conceptual map and the document through a split screen function.

Users can navigate documents by the ideas contained in them, which helps people with visual sequential memory problems to restructure a document without using cut and paste. Intellitips provide suggestions for improving the clarity and structure of a report.

Spark Report Writer also allows for the import of word documents and creates maps of these documents to make it easier for a user to access them in a conceptual way, enhancing their understanding of the content.
www.spark-space.com/report

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Diary of events

DISABILITY PARTNERSHIP NETWORK MEETING
16 April
University of Manchester
Action on Access is holding a meeting that is open to all staff who work with disabled learners in schools, further education colleges and higher education institutions. Attendees will discuss issues involved with supporting learners.
Fees: None
For further information: Visit www.actiononaccess.org

NAIDEX
20-22 April
National Exhibition Centre, Birmingham
Naidex is the UK's number one exhibition for the homecare, rehabilitation and disability market with over 360 exhibitors. This year the event also includes a Communication Village, which features assistive technology products from companies that include BT, Dynavox, Liberator and Toby Churchill.
Fees: None
For further information: Visit www.naidex.co.uk

TES EDUCATION 2010
23-24 April
Manchester Central (G-Mex Centre), Manchester
This year TES Education incorporates Special Needs North, the exhibition for SEN teachers and school support staff.
Fees: Continuing professional development sessions cost £12.
For further information: Go to www.teachingexhibitions.co.uk.

COMMUNICATION MATTERS ROAD SHOWS
Worcester 12 May; Birmingham 24 May; Leeds 8 June; Oxford 10 June; Basildon 24 June, Gateshead 7 July (and others to be confirmed)
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.
For further information: Email admin@communicationmatters.org.uk or visit www.communicationsmatters.org.uk.

SMART LIVING – THE WAY FORWARD FOR DISABLED AND OLDER PEOPLE
15 June
Department for Business, Innovation and Skills, 1 Victoria Street, London
Smart Living is a one-day seminar aimed at companies involved in building, engineering, medicine, energy and communications, together with architects, organisations providing caring resources, and bodies representing disabled and older people.
Fees: £25
For further information: Go to www.phoneability.org.uk/seminars/smart_living

TECHSHARE MOBILE 2010
15 June
International Conference Centre, Birmingham
The day will showcase innovations in mobile technology for blind and partially sighted people and others with disabilities. There will be a strong focus on both hardware and software, including mobile phones, netbooks, tablets and portable reading devices. Mobile web will also be a key element.
Fees: Not available at time of going to press
For further information: Go to www.rnib.org.uk/professionals/solutionsforbusiness/trainingandconferences/techshare/Pages/techshare_mobile_2010.aspx or email: techshare@rnib.org.uk

NATIONAL ASSOCIATION OF DISABILITY PRACTITIONERS (NADP) ANNUAL CONFERENCE
29 – 30 June
Barcelo Oxford Hotel, Oxford
The title for this year's conference is 'Inclusive Curriculum and Assessment – equalising the student experience, how level is the playing field?'
Fees: Full rate is members £420, non-members £490. Single days either £170 or £210.
For further information:
Call 01604 497933, email admin@nadp-uk.org or visit www.nadp-uk.org

E-ACCESS 10
13 July
Olympia 2, London
This year's E-Access has a strong employment theme. The conference is being staged in association with One Voice, the consortium of accessibility groups. The programme includes interactive sessions, workshops and case studies, with the opportunity to network.
Fees: To be announced
For further information:
Call Elodie Robertson on 01883 344799; email at elodie@headstar-events.com or visit the site at www.headstar-events.com

Contacts

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

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

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

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

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

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

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

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

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

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

A message from India

Kevin Carey was struck by the practical approach to disability rights he found on a recent trip to the sub continent

Recently in India I was delighted to discover that it has its first accessible web site. This may sound trivial but it's a start. I was at a conference on disability and IT and, not surprisingly, many of the features were shared with similar 'Western' events.

The Government was warm but not concrete in its commitments; major corporates were full of jargon and bluster without any tangible benefits – but the one characteristic that was totally different was the attitudes of people with disabilities and the organisations that work with them.

Not once did I hear the word rights. I suppose that with so much poverty and so many competing development priorities that its absence is understandable but, still, it was mightily refreshing.

Secondly, the degree of energy, optimism, affirmation and willingness to 'fix it' were truly inspirational. I got no sense at all that people were thinking of themselves as victims.

True, they were setting out what role they thought government and industry should play in accessibility, but this in no sense reflected a dichotomy between dastardly 'them' and downtrodden 'us'.

Thirdly, and this sums it all up, there was a great deal of discussion about experience and practical solutions but no ideology.

Strategy is lacking

Let me explain this last point. In my last column I alluded to the way we in the UK have got stuck, with advocates just sticking to their mantras, the favourite being: 'It's our right and the Government should pay'. As I pointed out last time, this just isn't a good enough strategy for people who earn their living from it.

Kevin Carey is head of eInclusion Consultancy at ATcare and chair of RNIB, writing in his personal capacity

What I learned from Indian campaigners was: you are competing with a lot of other rights and lobbying forces; the environment is fundamentally competitive and capitalist, not consensual and socially democratic; government, industry and the third sector need to involve themselves in mutual leveraging so that all three take the credit for each progressive step; there is no room for theoretical models and the economic or business case must be robust; and, finally, if one strategy does not work, try another.

This Indian experience is highly relevant to the UK because we have, to a certain extent, been walled up by our own strategy. In talking about rights theory rather more than practical projects we have been rewarded with more rights and lower budgets and no matter who wins the election, I suspect that that trend will continue.

Rights are cheap to grant, particularly if those who cannot enjoy them have to fight government or major corporates single-handed; it's significant that there is still no DDA case law on access to information.

Crossed wires

There is always a danger that if third sector organisations working with people with different disabilities get together, the real problems different people face will get blurred. I will never forget the place in India where there were neighbouring schools for deaf and for blind children and the warm-hearted inhabitants shouted at the blind children and helped the deaf children across the busy road!

That danger being granted, the much greater danger is that we will be picked off separately. The major charities should form a working group to make a consortium big enough to get hold of real money to sort some of the IT and disability problems we face. When money is relatively easy there is room for a wide degree of self expression – and even some self indulgence – but that time is well gone.

The different segments of the disability community need much tighter structures and they need to come together. The problems that blind and visually impaired people face with information navigation, for example, are very similar in practice to those faced by people with intellectual disabilities but are being kept apart by etiological preciousness.

My personal dream for the disability sector is that we can form a one billion a year charity that everybody will just have to listen to; but it might just be that we who serve, rather than those who pursue their own, different interests, are the major obstacles to progress. ∎

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