'It is not wealth one asks for, but just enough to preserve one's dignity, to work unhampered, to be generous, frank and independent.'  *W. Somerset Maugham, Of Human Bondage*

Paul Chrichton draws on recent statistics and his own experience to looks at the use of IT to assist in wholesale integration under the social model of disability.

The nature of individuality and IT is as vast as humanity itself. IT ethics writer Terrell Ward Bynum says, 'IT has begun to affect (in both good and bad ways) community life, family life, human relationships, education, freedom, democracy, and so on.'

The scope of the problem area is shown by the Office of National Statistics who reported in 2003 that the population of the UK exceeded 58m people. The Department for Work & Pensions (DWP) identified in excess of 10m of these having a disability as defined by the benefits system.

This equates to approximately one person in six. The problem is compounded by age, which is a factor that is often overlooked when providing services via IT as, according to the Disability Rights Commission, we have a population with a greater percentage aged over 60 than below 14.

The amount paid out in disability related benefits was £85bn in 2002/3, which includes the use of IT to bridge the gap.

The availability of DSA (Disabled Students Allowance) focuses on how technology along with non-medical human assistance augmented by legislation allows disabled students to compete on supposedly equal terms in the academic arena.

The DSA has three components, shown below as published by the University of Edinburgh:

- **Specialist equipment allowance**: £4,680 over the duration of the course. Any equipment purchased is the property of the student.
- **Non-medical helpers’ allowance**: £11,840 pa, covering note-taking, British Sign Language interpreters, reading, daily organization and so on.
- **General disabled students’ allowance**: £1,565 pa, used as a top up to the above and for IT services such as internet provision, Braille paper, coloured paper, printing costs and so on.
The allowance with most relevance to the IT profession is the specialist equipment allowance as, according to the DfES, in the financial year 2002/03 15,100 students were granted the allowance, which totalled £30.4 million, with an average of £2,010 per person.

The DfES say the specialist equipment allowance includes items of IT, but covers any aspect of specialist equipment required to enable the student to attend the course.

In these terms, the vast majority of this funding is spent on some form of system, from PCs to the control systems on a power chair, mobility scooter or other specialist device.

The nature of the specialist equipment supplied varies according to the needs of the student and is determined by an assessment carried out at one of a network of access centres.

Reading and specialist applications

According to the Royal National Institute of the Blind's (RNIB) right to read campaign, everyday three million people are denied the right to read.

When advances such as text to speech, speech to text and many other enabling technologies are fast becoming the norm in the 21st century, should this many people not be able to access information?

I use electronic versions as standard when I can get them. For a sighted user to buy a book from our university bookshop takes around five minutes but for a disabled person to get the equivalent in ebook format can take up to 20 weeks.

Many organizations are becoming much more helpful.

Intellectual property and copyright

It would appear from widespread publicity that as much goes into the protection of intellectual property and unauthorized distribution as goes into the production of the final product which is taken to market.

The need for copyright protection is self-evident to maintain the exacting standards expected of the IT professional and the industry. Technologies such as copy protection, online activation and the tracing and closing of peer-to-peer networks for illicit re-distribution appear to have stemmed the tide of piracy, but at what cost?

Exemptions

According David Pollak and Jane Mortimer of the De-Montfort University Student Learning Advisory Service and Kimberlyn Library at DMU: 'The Copyright (Visually Impaired Persons) Act 2002 removed the need to obtain permission from copyright holders in order to produce accessible copies and the restriction on the proportion of a work which may be copied; copying of an entire work is now permitted.'
But the Act explicitly excludes those with perceptual or cognitive disabilities such as dyslexia. It has been suggested that those who experience visual stress or Meares-Irlen Syndrome are included in the definition, but this has not been tested out.

Although the dyslexic fall short of inclusion in this invaluable resource for those with visual impairment, a study at De-Montfort University shows that those students who could potentially benefit from electronic format reading material numbered 764, of whom 22 were classed as visually impaired. The remaining 742, 96.5 per cent, were classed as dyslexic.

The hidden tax of disability

Those covered by the Copyright (Visually Impaired Persons) Act 2002 can apply to publishers for an electronic copy of a work without the need to purchase the paper version, however this appears not to be the case for the dyslexic, who should buy the paper copy, present a receipt and the publisher may supply an electronic version.

This does not apply only to electronic publishing but to hardware and software. For example a mouse and keyboard costs around £10, but for a user who is quadriplegic a comparable device such as the quadjoy mouse costs around $1,000 when supplied with the blowing tube for mouth interaction.

Potential Solutions

The market for solutions for disabled users is not small with 10m potential UK users alone. As technology develops, methods of delivery for electronic versions of work and software has the potential to stem the flood of illicit copies of products.

It is the right of the author to protect their work, however it should be the responsibility of publishers, software companies and the IT profession to ensure that it is available to as many potential users as possible.

The industry has a moral obligation to work for the benefit of mankind. And the economics are simple: 100 disabled pennies equals one able-bodied pound.

Paul Crichton is a Student Member of the BCS and a Member of the Guild of Accessible Web Designers.

further reading

Disability/Human rights:

- [www.disability.gov.uk](http://www.disability.gov.uk)
- [www.dwp.gov.uk/dda](http://www.dwp.gov.uk/dda)
Assistance:

- JAWS screen reading software
  www.freedomscientific.com/fs_products/software_jaws.asp
- TextHelp screen reader for dyslexic users
  www.texthelp.com/rw7.asp?q1=products&q2=rw7
- Dragon naturally speaking
  www.scansoft.com/naturalspeaking/
- Any modal speech recognition systems
  www.mmodal.com/products/anymodal.html
- QuadJoy mouse for quadriplegic interaction
  www.quadjoy.com/quadjoy.htm

in a nutshell

- 10m people have a disability as defined by the benefits system.
- According to the Royal National Institute of the Blind’s right to read campaign, everyday three million people are denied the right to read.
- The Copyright (Visually Impaired Persons) Act 2002 explicitly excludes those with cognitive disabilities such as dyslexia.
- A mouse and keyboard costs around £10, but for a user who is quadriplegic a comparable device costs around $1,000.
- The market for solutions for disabled users is not small with 10m potential users in the UK alone.
- The economics are simple: 100 disabled pennies equals 1 able-bodied pound.

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