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LIFE HACKING

TECHNOLOGY THAT IS TRULY CHANGING LIVES

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Everyone struggles with something. Whether it's concentrating on work, remembering to do a small task, prioritising activities, or choosing something to wear in the morning. We are all, always looking for better ways to do everything. For disabled people this is equally true, except there are a few extra barriers in the way.

We are in an age of living imagination. Robotic arms, cochlear implants and eye-gaze technology grab the headlines as advances in technology make the impossible possible.

But there is a quieter dream playing out in the background that's pushing the boundaries of engineering and the possibilities of life even further.

Assistive technology covers a wide range of software and hardware, with the potential to give the 12 million disabled people in the UK – along with 6 million carers – the freedom to access education, work or simply everyday living. These technologies may not be quite as sexy yet, but they are vital to giving people independence.

But there are two barriers standing in the way of the freedoms that assistive tech provides. Firstly,



Left: Andiamo's 3D printed leg brace – an example of the innovative assistive technology coming out of the UK

new technologies can be expensive and for disabled people there is an extra barrier as government funding cuts mean people are less able to afford these life-altering technologies. Secondly, most people are simply unaware of the technology or how to use it.

These issues pose a challenge: how can the tech community and disability community work together to develop the scope of and ensure access to assistive tech?

Disabled people are consumers, something that's often forgotten. And with one in five people in the

UK living with a disability, this offers a significant market to tech innovators. But in the Consumer Models for Assisted Living report by Coventry University, the top-rated barrier to buying assistive technology was cost.

"There's huge ignorance about what this market looks like," says Philip Connolly, policy and development manager for Disability Rights UK. "But the disability consumer market is actually bigger than the current consumer market of China – so

why not start developing and selling into that market that already exists?

"There's a role for government here in terms of helping the market to crystallise this through research and intelligence. The 'gay economy' is well established – the 'pink pound' – and we need to start looking at the 'purple pound', to go after the spending patterns of the disabled pound."

UK sales of assistive technology are currently largely supported by government schemes, such as Access to Work for those entering the workplace, and Disabled

Students Allowance for people getting on in higher education.

In 2012 to 2013, 56,600 full-time undergraduates received DSA totalling £127.6m, along with 3,000 part-time students, who received £7.3m, and 4,900 post-graduate students, getting £10.9m. A total spend for the Department for Business, Innovation & Skills of £145.8m. During the same period, 31,500 individuals were helped by the Department for Work and Pensions through Access to Work.

But these budgets have seen significant cuts for hundreds of thousands of disabled people, with leaked plans from the new government identifying still further savings to be made. "In the austerity climate, with these programmes seeing cuts, this presents significant damage to the growth of the assistive sector," Connolly explains. "The changes the government has embarked on are a massive threat to disabled people's ability to progress and succeed at university."

INCREASING ACCESS

One way that more people can start spending on these life-changing solutions is to lower the cost, which might be done through exploring the wider opportunities to sell these products. Assistive technology can be useful for everyone – it's life hacking – so it's not just for disabled people. If technologies such as mind mapping software Inspiration, ClaroRead, a multi-sensory tool to support reading and writing, and the popular speech recognition software Dragon Naturally Speaking became mainstays of the office for everyone, they would not only improve productivity and help lower price points, but also break down attitude barriers too.

Accelerator spaces like Wayra UnLtd and Bethnal Green Ventures, supported by a £10m Social Incubator Fund created by the Cabinet Office, have been incubating some exciting assistive tech ideas over the past few years. But, while

mainstreaming is happening, more needs to be done and sooner.

Tech companies must make sure their products are more compatible with assistive technology. Does your product work with Dragon Naturally Speaking or Jaws? Do you know what this software is? With almost 2 million people in the UK experiencing sight loss, can you afford not to?

Think of it as future proofing. Demand for and use of these products is set to skyrocket because of an increasingly ageing, but tech-savvy, population. Already today, 95% of disabilities are acquired over the course of a lifetime, rather than being something people are born with.

In this context assistive tech is not an extra but rather a vital tool providing life hacks for everyday problems, says Andrew Johnson, managing VP of Gartner: "Text-to-speech recognition not only allows sight-impaired people to listen to the printed word, but also helps solve part of the distracted driving epidemic by delivering audio versions of text messages. Similarly, optical character recognition began with creating devices for the blind, but has expanded into applications such as license plate recognition used by law enforcement."

A good example of this is Dragon Naturally Speaking created by Nuance. Used for years by many disabled people, Nuance's technology is now truly integrating into the mainstream, with cloud speech recognition in domestic appliances including TVs, voice biometric security for banking identity, use with wearable devices and solutions for contact care centres.

Talking to our devices is now commonplace (thanks Siri!) and this ubiquity has a positive effect for disabled users, making this kind of technology even more accessible, intuitive and easy to embrace. Social, as well as technological, developments have

helped to reduce any stigma and embarrassment a first-year student might feel when using disability software for the first time.

BUILD IT YOURSELF

The Disability Entrepreneurs Network believes there are a whopping 2 million disabled entrepreneurs working in the UK, which is growing due to the accessible technology rise.

"Self-employment is not going to be right for everyone," says Tom Jackson, Remploy's business implementation director. "But it could be an option for people who require flexible working patterns as a result of their disability or health condition. It also aligns with Remploy's mission to help support more people into employment."

Disability Rights UK has suggested the creation of a Disability Enterprise Taskforce charged with scoping out what more can be done to support disabled entrepreneurs, like helping them access credit and form relationships with their peers.

But Philip Connolly says the government "did not give an effective response. But if you can't see or hear it affects your ability to receive information, so you just may not be aware of what government support is available." He is currently working on the launch of a mobile digital fabrication lab to be based in Salford making it easier for disabled people to access tools like 3D printers and laser cutters.

"What a lot of people don't know is that many of the most famous inventors, Einstein, Edison were people with disabilities," Connolly concludes. "This cognitive diversity actually encourages them to have to think in different ways – they have had to come up with ways of solving problems that other people take for granted.

"It's these highly resilient qualities, these skills and talents of more diverse people, particularly in a globalised world, that the whole of the sector can benefit from." ■