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Using Technology To Mitigate Cognitive Disabilities

A 2013 ruling by the Department of Labor established a baseline for federal contractors to have 7% of their workforce be individuals with disabilities. Additionally, passage by the U.S. House and Senate of the Workforce Innovation and Opportunity Act (WIOA) demonstrates a growing emphasis on hiring more individuals with disabilities. However, for this trend to be successful for businesses, they must improve their recruitment and retention of these individuals.

Within the disabled community, one of the largest sectors is made up of individuals with a cognitive challenge of some type. Although people may think that a cognitive disability indicates an inability to perform complex work, most cognitive disabilities are related to processing issues such as difficulty tracking rapid speech or cognitive fatigue.

With a generation of students educated under the Americans with Disabilities Act (ADA), an aging workforce, and improved medical care that allows injured individuals to return to work, cognitive disabilities are likely to increase in the workplace. In fact, these challenges are, at some point, experienced by the entire workforce (including older workers), and can play a major role in productivity and successful team interactions. It's estimated that, at any given time, 25% of the workforce may be experiencing some type of cognitive issue. Furthermore, most cognitive disabilities are "invisible," which may result in behaviors being misattributed and mismanaged. For a large company, this can result in high turnover and lack of engagement. The good news is that technology augmenting cognitive processing functions is rapidly entering the market.

A typical office environment can be overwhelming for people with cognitive disabilities. (Photo credit: Wikipedia / Phillie Casablanca)

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To better understand these issues, we spoke with Madelaine Sayko, president and co-founder of Cognitive Compass, an organization that advises businesses on approaches and resources to accommodate employees with cognitive disabilities. According to Sayko, "The cognitive tool sector is expected become a $5 billion market in the near future – able to serve not only those with cognitive challenges but to support all employees in a range of executive function tasks." For example, many popular productivity tools (such as Evernote, Apple's Siri, and Google Calendar) have been repurposed to assist those with cognitive challenges. It's likely that the trend will also move the other way, with tools initially developed for individuals with cognitive disabilities becoming popular with the general public.

Sayko highlighted four interesting products that are specifically geared for the disabled but have the potential for broader appeal:

1) My Bionic Brain® (by Cognitive Harmonics) is an iPad-based work and personal life management tool designed to meet the needs of individuals with cognitive disabilities. The product enables organization and productivity at home and work by teaching skills that compensate for short-term memory impairment, disorientation, loss of emotional control, and difficulty with organization and time management.

2) PEAT® (by BrainAid) is a virtual executive assistant for use by people with a wide range of cognitive impairments including brain injury, ADHD, stroke, and pre-dementia. PEAT is an Android app based on artificial intelligence methods developed at NASA's Ames Research Center to help individuals achieve greater functionality.

3) BioZen® (by the National Center for Telehealth and Technology) is another smartphone app, this one developed by the Department of Defense to assist service members experiencing PTSD and TBI. BioZen provides real-time biofeedback from body sensors to show users their attentive cognitive states and allow them to self-modify. One can imagine a product like this helping long-distance drivers and pilots to stay alert.

4) Livescribe® is an advanced, paper-based computer with a pen that records everything you hear and write. It synchronizes the audio you hear to what you write, so you never miss a word. An embedded infrared camera and audio recording capabilities are combined in a slightly larger-sized pen that is used on special digital paper. Beyond therapeutic assistance, it could be used as a memory enhancer and documentation device for students and businesspeople.

"These augmentative technologies represent the cutting edge for improving business functions, and they're just a small sample of technologies that are coming to market," says Sayko. Hopefully, that trend will continue, allowing more persons with disabilities to achieve their full potential.

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Highlighting emphasis added