

Technology Radar: BusinessLab's review of technologies that are making the news, March 2010

An ActiveAge Report

Snapfon

According to Ofcom 48 % of people over 60 regularly use a mobile phone. Mobile phones are said to be the only 'newer media' used on a regular basis by adults over 60. Use of mobile phones varies considerably with age with 71% of those 60-69 being regular users compared to only 45% of those over 70.

Furthermore, older people say they prefer to use their mobile phones for simple functions. For example, Ofcom's *Digital Lifestyle's* report states that older people are less interested in taking and sending photos, and primarily use their phone for making calls.

Taking cognisance of this, a company called Snapfon introduced the ez ONE. Snapfon claim the ez ONE is the easiest phone to use on the market today. It is aimed at senior citizens, low vision users, children and anyone who just wants an easy to use phone.

This mobile phone was designed with seniors in mind and includes some important safety features without using complicated technology. In an emergency there is a red SOS button, which the user needs to hold down for 5 seconds. This sounds an alert and consecutively calls 4 programmable numbers until someone answers. It can also send a text to these numbers that says 'emergency please answer my call'. The phone is also set to call your local emergency services when the SOS button is activated.

The other key features of the phone include large, bright buttons, which are said to be 'the largest in the market'. The ez ONE screen text is also very large compared with other phones at 28-point font.

Another unique feature of this phone is the speaking keypad. Even if you can't see the keys properly you will hear the numbers being called out to you as you dial them.

Despite its simplicity this phone still has some additional features such as a radio, a flashlight and the ability to send text messages.

This product is currently only available in the USA for \$100.

For more information please visit:
<http://www.snapfon.com/default.php>
(USA, VisiKey LLC.)

iShoe an electronic shoe insole to prevent falls

According to the NHS, falls are a major cause of disability, impairment and the leading cause of death due to injury in older people. Statistics show, in UK every year, 30% of those aged over 65 and 50% of people aged over 80 fall at least once a year.

iShoe is a high-tech battery powered shoe insole, developed by NASA and MIT to diagnose poor balance in older people when they stand. iShoe stores all the user's balance data and transmits this information to a computer via bluetooth. The product is designed to enable early diagnosis and rehabilitation of deteriorating balance in older adults.

According to Erez Lieberman, a graduate student who developed the technology while working as an intern at NASA, the key to a person's balance is not in how well they walk but how well they stand. According to him a well-balanced person might shift his or her weight every 40 second but this decreases to as little as every second for an old person with poor balance.

The sensor laden insoles measure the pressure distribution across a person's feet, which is offloaded onto a computer and analysed with the aid of a special algorithm the researchers have created.

At the moment the iShoe product is still at the research and development stage. However, eventually the system could let doctors catch balance problems in the early stages and allow them to take appropriate action, or even notify a family member if an individual falls.

For more information please visit:
<http://www.i-shoe.net/products.html>
(USA, iShoe Inc.)

Kompaï a robot that can communicate

Over the months ActiveAge Technology Radar has followed the development of various robot assistants, which have been designed for older people. This month we've come across a robot called Kompaï, designed by a French company called Robosoft. Kompaï can speak, comprehend what is said and can navigate its way around the house. It can also access the Internet with a few words from its user.

Kompaï understands basic instructions and requests and offers appropriate responses in its own monotonic style. Kompaï can serve as a note and shopping list recorder, a calendar, a music player, or a video conferencing tool for when an individual needs to call a doctor.

Something that makes Kompaï unique is its permanent connection to the Internet and associated Internet services. For example Kompaï can send an email to the doctor when the user is not feeling well and also reports the condition of the user to the doctor. Kompaï can keep track of the user's meetings and appointments and remind the user about these.

Currently Komapï is only at a research and development stage. Robosoft are hopeful that later versions of the product will be equipped with visual ability,

and facial recognition. The company are also hoping to develop a version of the robot with arms so Kompaï can do tasks such as cooking and cleaning.

For more information visit:

<http://www.robosoft.com/eng/>
(France, ROBOSOFT)

The Brain Computer Interface (BCI)

“The Diving Bell and the Butterfly” is a film about the life of a journalist, Jean-Dominique Bauby, who suffered from a condition called locked-in syndrome following a stroke. This condition means a patient is aware and awake, but cannot move or communicate due to complete paralysis of nearly all voluntary muscles in the body except for the eyes.

In the film Bauby is mentally aware of his surroundings but physically paralyzed, with the exception of some movement in his head and left eyelid. Bauby embarks on the process of writing a book describing his life suffering from locked-in syndrome and his life prior to the stroke. A transcriber repeatedly recites a French language frequency-ordered alphabet until Bauby blinks to choose the next letter. He does this over ten months until the book is complete.

There are other people around the world like Jean-Dominique Bauby who suffer from this syndrome and similar disabilities, which mean they are unable to communicate or interact with other people or their surrounding environment. The locked-in condition is seen as being so severe that it’s often described as ‘the closest thing to being buried alive’.

As a result of this condition many groups all over the world have intensified their work in the field of brain-computer interface (BCI) research. A BCI provides a direct communications pathway between a brain and an external device.

Now an Austrian company Guger Technologies (g. tec) has introduced a new product called IntendiX, which is a mind reading computer that types your thoughts. This product provides a communication system utilizing an electric cap to capture brainwaves. The brainwaves are transferred to a computer and used to interact with a software programme.

Although IntendiX is not the first brain computer interface to come along it is the most consumer friendly at a cost of \$12, 000 which is relatively modest for this type of technology.

IntendiX is designed to be installed and operated by caregivers or a patient’s family at home. The system is based on visually evoked EEG potentials (VEP/P300) and enables the user to sequentially select characters from a keyboard-like matrix on the screen just by paying attention to the target for several seconds. Although this does requires some training most subjects can use IntendiX reasonably well within about ten minutes: a rate of 5 to 10 characters per minute can be achieved by the majority of users at their first trial.

In addition to writing text a patient can also use the system to:

- trigger an alarm,
- ask the system to read the written text out loud
- print out or copy the text into an e-mail
- send commands to external devices.

The feature of sending commands to external devices could enable the user to perform many day-to-day activities independently such as controlling the TV, the telephone or a music player and in a smarter home they may also be able to control heating systems, open windows and doors and perform various other functions using only their thoughts.

However, for severely handicapped persons and patients close to the “locked-in state” the performance of such a BCI system depends on various factors such as training, visual faculty, concentrativeness and cortical degeneration.

For more information visit:

<http://www.intendix.com/>

(Austria, Guger Technologies)