



Revenge of the four-eyes

Mark Whitehorn decides to hold off on **corrective surgery**, as specs could be the next big thing.

Having been seriously short-sighted from birth, and suffered the slings and arrows of my contemporaries in the playground, I've been tempted for some time by the promise of laser treatment for eye defects. However, thanks to the PDA, I'm holding off because it looks as if spectacles could shortly become the new fashion essential of the millennium!

The wearable computer (WC? – surely not) has been getting a great deal of attention on the Internet recently. Try www.wearables.net as a great starting point. Wearable computers come in all sorts of shapes and sizes and are set to have a whole variety of functions. In fact, it is one of the joys of a totally new field that many of the important areas have yet to be set in stone. Will the major



There's that NASA technician using a WC to inspect the grouting between the tiles

research sites in California, I got to play with a wearable computer. It consisted of a box clipped onto my belt, a headset

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input device be a trackball held in the hand, a data glove or something that tracks eyeball movement? However, one area that is reasonably certain is that output is likely to be audio (into the ears) and visual (into the eyes).

During a recent trip to Almaden (www.almaden.ibm.com), one of IBM's

and a trackerball-type pointer sitting in the palm of my hand. The headset contained headphones and a projector that squirted an image directly into my left eye. I presume the image is directly focused in some way, because what I saw was a normal-sized screen floating perhaps two feet in front of me. The

quality was lower than we are used to (I'd guess it to be about CGA/EGA quality) and it showed a GUI interface, complete with pointer. Moving the pointer with the trackball enabled me to click on an icon and watch a cartoon complete with soundtrack.

For a gadget

freak this was seventh heaven, but it had some disadvantages. For a start, my two eyes collaborated to show me a screen floating in mid-air, but they were lying. The projector in front of my left eye more or less filled the visual field, so that eye was seeing nothing except the 'screen'. This means that I had lost most of the normal depth perception in the real world and avoiding large moving objects (such as one tonne cars travelling at 30mph) would have been more taxing than usual.

However, on the wall of the lab was a picture of a pair of spectacles with a transparent screen hanging invitingly in the glass of the left eye. The IBMers couldn't be drawn into producing the real thing for me to try, but they did hint that it is more than virtual. (Incidentally, there is another fascinating site, not just for wearables, but small computers in general – fancy a web server the size of a box of matches? Try: <http://wearables.stanford.edu>.)

I know that users of hands-off phones are already wandering around the streets apparently talking to themselves (the first one I came across was standing next to me in a bookshop; I genuinely thought he was demented until I saw the wires... even then I wasn't sure). I think it unlikely, however, that it will become fashionable to walk around wearing a headset and blind in one eye (the lawyers will have a field day). Those designer shades are the answer, so I am holding off on the laser treatment bit for the time being.

But what have wearable computers got to do with PDAs? It's a fair question and one that seems to have escaped the keen advocates of these new gadgets. The sites are full of interesting projected uses for these machines. The NASA site (www.ksc.nasa.gov), for example, envisions technicians using them to help with the task of checking all the ceramic heat-tiles on a used space shuttle. I do



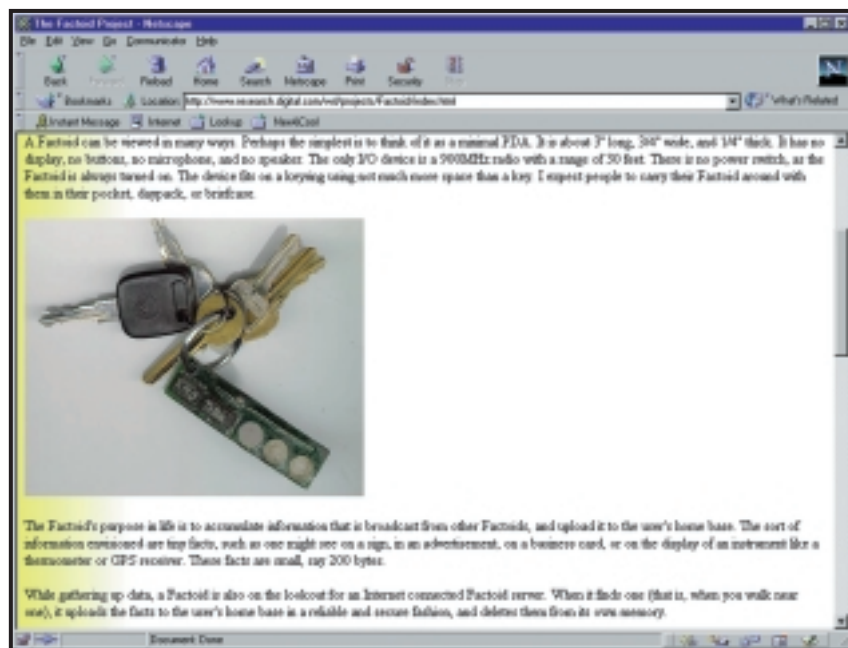
A tiny PC from the Stanford site and yes, that is one of the IBM microdrives just visible on the bottom of the device

understand that each shuttle has lots of tiles, but even so I really can't see this bringing the mass sales necessary to make the wearable computer a commodity item.

But imagine a PDA constructed as a wearable computer and integrated with a phone. You could 'see' all of your appointments, dial people by voice and videocall (or watch a movie) while sitting on the tube. In other words, the functionality of a PDA is, by now, far too well established to consider dropping it. The wearable computer is only ever going to become significant when it gives us that functionality and more. Oddly this seems to have escaped the designers who are concentrating on the more esoteric functionality.

Don't get me wrong, I love the idea of all those extra possibilities as well. For example, www.research.digital.com/wrl/projects/Factoid/index.html (the f of factoid must be typed upper case) envisages a world where the wearable computer collects 'factoids' of data as we walk around (see [screenshot below](#)). These are automatically dumped to a main computer every day so that we have a permanent record of where we have been and what we have done. Factoid or fiction? I don't know, but I do see PDAs evolving into wearable computers in the near future. And that will be the final payback for all those playground taunts.

A prototype factoid device



Balance of power

Manufacturers agree a standard for power supplies, connectors and voltage requirements!! Check the month on the front cover and yes, you've guessed, it's April fool time. But wouldn't it be a wonderful headline?

Since I am a journalist, you may not be surprised to hear that my knuckles drag on the ground from carrying so

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much kit but I ascribe this, not to heredity, but to the manufacturers' obsession with permutations on the theme of power supplies. Individual PDAs and other devices are pared down by fractions of an ounce but their power supplies certainly aren't and they are almost never interchangeable. Carrying five different bits of kit means carrying five oh-so-similar-but-ever-so-slightly different power supplies.

For example, I visited some friends recently, taking my laptop in order to do a little work. The work expanded to occupy more than a battery-full of time so after a great deal of searching, a likely power supply was unearthed with the same connector (wow!). My laptop requires 16v and 3.3amps: the power supply offered 15v and 3amps. OK, close enough; I promised myself not to run the

CD-ROM drive to keep the power usage well below 3amps and I plugged in the connector. Or rather, I tried to. The connectors looked the same, but actually differed by about 0.5mm in diameter. Sigh.

I realise that sympathy for journalists is at a low ebb, but surely there are normal people out there who carry some combination of PDA, laptop, modem,

portable printer, digital camera and GPS unit with concomitant power supplies. The whole point of portable kit is surely lost if you have to heave multiple weighty lumpy power supplies around too.

I'm not asking why manufacturers avoid standardising power requirements and connections: to me it seems pathetically obvious that they're tying us into using another of their products. I'd just really rather that they took a different – broader – view.

Solutions? It's possible to buy a single adaptor that puts out various voltages and has a range of connectors (I have two), but even with these it's worth checking that all the output and connector types you need are covered by the adaptor. They also tend to be unpleasantly bulky if you buy one with an output suitable for all devices.

GPS update

After the great re-set of satellite clocks, I wrote in the December 1999 column about how you could retrieve the situation for some Global Positioning Systems by letting them download a new almanac. I did this myself and all went well until I used the unit away from home: it fired up OK but as soon as I started to move, the unit lost track of the satellites it had just found. I think I've cured it of this tiresome habit by leaving it to look at the sky for several hours on end: I don't know if this effected an actual cure or whether it was just chance. Maybe the unit needed time to supplement the new almanac with other information from above. Who knows? If yours shows the same symptoms it could be worth rigging up a power supply (see above) and leaving it to seek heavenly inspiration.



pda

Henry Smith		Cw%:	Ex%:	Sat:	Nstore page up page down full text Next screen 2:12 Mon 10
Science	4.1.(a) describe the changes in light, sound or movement				
LEVEL	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	
1	Full text of Level Description 4.1.(a) for Science describe the changes in light, sound or movement, which result from actions such as switching on a simple electrical circuit, or pushing and pulling objects.				

Sc En IT

Henry Smith		Cw%:	Ex%:	Sat:	Nstore page up page down full text Next screen 2:13 Mon 10
Science	X is a conscientious pupil, who consistently achieves a high standard in his work.				
Att	1 2 3	1 2 3	1 2 3	1 2 3	
1	Full text of Teacher Comment X is a conscientious pupil, who consistently achieves a high standard in his work.				

Sc En IT

SCIENCE:		Nstore page up page down full text Next screen 2:14 Mon 10
Henry is a conscientious pupil, who consistently achieves a high standard in his work.		
He has worked steadily, and has improved his skills in many aspects of his work as a result.		
He is making steady progress in this subject, and needs to maintain his enthusiasm to consolidate this.		
He has produced some interesting work, but needs to remember to pay attention to detail, and achieve a more consistent standard.		
N=Next Page Q=Quit		

Palm synchronicity

I have complained (whinge) that this column has far too little Palm-related stuff, so I was delighted to hear from David Martyn (David.J.Martyn@btinternet.com).

He has been the proud owner of a Palm III for some time now. However, when he upgraded his email program to Outlook Express 5 (as supplied on the PCW cover CD) he could no longer find a menu option to allow him to set MAPI options. Consequently his Palm would no longer synchronise email.

The good news is that when he upgraded Outlook Express 5 with the latest downloads from the Microsoft site it was suddenly happy to sync with his Palm, totally unprompted. He's happy and wants to pass on to other Palm users the fact that the version of Outlook Express that works in this way is 5.00.2919.6600.

Teachers get help keeping track of children's progress with Nstore

Nstore at school

Meanwhile, back in reality... one of the most novel applications for the Psion I've seen recently is Nstore. You'd never guess it from the name, but Nstore is a record-keeping and reporting package for the National Curriculum. As a writer formerly known as 'Sir', I appreciate the work that's gone into this product and the benefits it could bring to hard-pressed teachers across the country.

Each subject within the National Curriculum is defined by a raft of numbered paragraphs, called Level Descriptions. Teachers are expected (in that copious spare time between lessons) to ensure that their teaching conforms to the curriculum and to track how well every child is performing for each level description paragraph.

Of course, they aren't expected to

'teach' the curriculum paragraph by paragraph, they are expected to teach well-structured lessons and to keep track of which paragraphs have been covered by those lessons.

Nstore contains the entire National Curriculum and allows teachers to search that data for paragraphs relevant to a particular lesson and (after the lesson) to score each child for performance against each paragraph. Reports of pupils' scores can be viewed on screen, printed or exported in a range of formats. So far, so good.

However, Nstore also contains over 750 teacher comments, such as: 'X has had a good year but he/she finds this subject taxing'. The teacher can mark any given child/paragraph combination as worthy of comment. When the report for that child is generated, the program uses the score given by the teacher to choose a relevant comment, personalises it for the particular child's name and gender ('Tracey has had a good year, but she finds this subject taxing') and then prints it.

Too much like automation? Not really, the bank of comments (all taken from actual reports) are only suggestions and can be modified as necessary, and altering an example is usually a quicker process than starting from a blank sheet.

Nstore is available for PCs, Acorn Risc and Psion (3a/3c/3mx and 5). Report and mail merge facilities are invariably better on PC-type platforms so many Nstore users collect data on the Psion and transfer the data files to a PC to generate reports. For registered users of the Psion versions, the PC version costs £29.95, reduced from £49.95; site licences are also available.

The product suffers from some interface inelegance but if my job description was still teacher, Nstore would make me feel less as if it was 'teacher' spelled 'administrator'. The product is, of course, closely targeted at the teaching profession but it's interesting to come across such an inventive and useful role for the Psion.

Further details can be found at www.argonet.co.uk/users/h.s.soft.

CONTACTS

Mark Whitehorn welcomes your feedback on the PDA column. Contact him via the PCW editorial office or email pda@pcw.co.uk