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The Editor Personal Computer World **VNU House** 32-34 Broadwick Street London W1A 2HG

or email > letters@pcw.co.uk

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THE BROAD PICTURE

With the rash of new machines featuring DVD drives, isn't it about time people in the industry started developing widescreen monitors? There are cards for outputting the Dolby 5.1 sound system but no monitors to see the full picture. Of course, movies aren't a particularly good reason for businesses to buy widescreen monitors, but how about the productivity gains of being able to see two sheets of A4 side-by-side: perhaps a copy of Netscape on one side, while writing a report in Word on the other?

ASHLEY SEARLE asearle@colt-telecom.com

PCW replies > Good news, Ashley. Every time we speak with panel and CRT manufacturers they talk confidently of releasing widescreen displays in the near future, and several previews turn up at various trade shows. In the meantime, Sony's W900 is a 24in widescreen CRT PC monitor, although with a somewhat curious 16:10 aspect ratio.

LETTER OF THE MONTH

SAFE FROM THE CYBERNAUTS

Humans and computers will become more integrated in the future, but unlike Professor Warwick (PCW Dec '98) I do not believe we are in danger of being replaced by super-intelligent machines. The problem with writing a program for Al is that it cannot be done. Any program is ultimately a series of rules which states the output for a given input. Unfortunately for Professor Warwick, Gödel proved that any formal system has "holes" in it. My personal belief is that the neural net in our heads gains its power not just from its scale but from the fact that, ultimately, whether a neuron fires is determined by a single electron, which is itself determined by quantum probability. I cannot see how we can successfully model in real time the inherent randomness at the core of our intelligence. It is this chaos at our core that enables those intuitive leaps we call intelligence. But that doesn't mean we shouldn't try. Who knows what insights we may gain?

> DAVID BASIL WILDGOOSE dbwildgoose@dial.pipex.com

Prof. Kevin Warwick replies > Machine intelligence and human intelligence exhibit, for the most part, many different characteristics. The hardware employed to implement each intelligence along with how it interacts with the world is not the same, even when a machine design is based on a model of the human version. There are, as your letter points out, numerous approaches to categorising and formulating the different modes of operation, quantum effects being a popular modern theory, but we should be careful what conclusions we draw because of the differences in intelligence. The fact that humans cannot successfully model a particular feature of our own intelligence is an interesting observation, but it does not provide a limit to possible machine intelligence other than to indicate that it is difficult for humans to imagine a form which is the same as our own. I do not feel that there is an inherent randomness or chaos in human intelligence. Can anyone truly do anything that is, to them, random? Further, when given the opportunity, due to their potentially more powerful physical capabilities, I see no reason why machines cannot be far more intuitive, creative and intelligent than humans!

THE BBC MICRO AND A FORESIGHT SAGA

Since when did the government choose between the PC and the BBC machine (Business Matters, PCW Jan '99)? In the early eighties, the only computers suitable for educational use were the Newbrain, Apple II, Sinclair Spectrum, and the BBC. I remember that the Apple II (not the Mac, which didn't appear until 1984) lost out to the BBC machine in many schools because of price. But the real reason it was chosen above its competitors was because of its in-built programming language, BBC Basic, which allowed many children to become skilled programmers. Today, computers are just applications machines and this is why Acorn's later systems failed to thrive. To suggest that the government of the day should have had the foresight to back the winning horse, when half the horses hadn't even been called, is fatuous. Perhaps Mr Clegg could tell us what semiconductor firms will be the market leaders 15 years hence? For a man with his obvious foresight, it should be easy. ALEX PINKERTON

alpink@globalnet.co.uk

Brian Clegg replies > Alex's chronology is wonky. I believe the BBC-B appeared in 1982, a year after the IBM PC. He's right about the

date for the Apple Mac (I noted this in the article) but misses the point. The US already had educational computers but made a switch to something more appropriate. I'm not sure why he suggests that today's computers are "just applications machines" or why having an application should be a bad thing, but it's strange that Alex thinks the government needed to be psychic to back the right technology. By the mid-eighties, most businesses had got it right without the aid of Mystic Meg.



GOING GUI ABOUT ROM

Regarding the continuing discussion about putting Windows onto a ROM (Letters, Dec '98 and Jan '99), cast your mind back a couple of years, to the Atari Falcon - a 32-bit computer with a 32-bit operating system, multitasking, customisable desktop and true-colour to boot. This operating system would boot up from ROM even if no hard disk or floppy drive were connected.

I am also pretty sure that the ROM took up only about 1Mb or so. I thought the appearance of the operating system, Multi-TOS, was nicer than Windows and faster, too. All the drivers needed by software were usually kept on a hard disk and were loaded only when a program called for them. So there you go: proof that a good Graphical User Interface can be held on ROM.

SAM LUNT

colin@luntcp.globalnet.co.uk

THE BBC MICRO WAS AN **FARIYI FARNING CENTRE**



I'm one of those people you're expecting to tear lumps out of you for slagging off the BBC (Brian Clegg's Business Matters, PCW Jan '99). "When you see how five-year-olds can use a Windows PC..." you say. Well, I believe you are wrong to compare facility of use in the BBC Micro with that of a PC. Different skills are required to use an application than those required to write one. The BBC was probably the last computer that a pupil could actually comprehend in its entirety, largely due to an elegant design and a comprehensive, clear User Guide. Am I wrong in thinking that it is far better to learn how to understand the workings of a computer than to learn to use Microsoft Works? In my book, veneer is no match for totality.

CONOR McQuaid

gonad@enterprise.net

I was not really slagging off the BBC machine - I Brian Clegg replies > did call it "sophisticated"! When I

started programming in the late seventies they tried to explain to me how the computer, a Dec System 10, worked. I'm afraid I did not care, any more than I needed to know how a ballpoint pen works in order to be able to write a good story. It was what the computer could do that was wonderful, not how

it did it. I cannot imagine many five-year-olds were programming BBCs. Weren't they using "educational software"? For older children, I believe something like Visual Basic can be made just as approachable and produce

far more impressive results. Usability and quality of interface account for a lot more than just veneer.

STEADY ON ROM

Your reply to Stephen Fusi's letter about putting operating systems on ROM (Letters, Jan'99) inferred that PCs could not possibly benefit from technology already used in "toys" such as consoles. Not so. If people buy console games on 32Mb cartridges, that is more than enough to store NT's kernel. Subsidiary files such as swap files would have to be re-initialised but load times would still be much quicker. Once loaded, no PC OS uses anywhere near 32Mb, otherwise most users would have no RAM left to run anything else. If you had a flash-ROM PC the first thing you may see on powering up could be the NT logon screen. Quite a time saving? The main issue, though, is not load time but stability. When NT and 98 crash they can often take down the Start bar, leaving you in limbo. But if the Start menu and kernel were in hardware and were accessible the instant you pressed the Start button on the keyboard, then at least you could properly deal with the crashing application. At present, the Start and Control menus are affected far too much by program activity - even loading a large file, or network browsing, can render the interface inaccessible. One day, people will no doubt crash space shuttles into space stations while they feverishly press CTRL-ALT-DEL!

WILL HODGKINSON

will@vli.co.uk

Andrew Ward replies > Windows in ROM

Embedding

has always been possible and can even be done with Windows NT in as little as 10Mb using Component Integrator from VenturCom. But this is intended for such things as embedded control systems and is unlikely to be useful as a desktop platform; since so much is stripped out, it's not relevant to generalpurpose PCs today, as we know them. However, there is another ROM-based operating system from Microsoft, Windows CE, which is gradually creeping up the complexity scale and now, with DirectX support, is likely to emerge into the games console/ set-top box/PC convergence market and perhaps even replace Windows 98 on entry-level desktop systems. This may become the route through which we see the benefits of ROM-based operation on the desktop.

FURO DIS-HARMONY

James Taylor, the writer of your article about the euro ("European horizon", PCW Jan '99) immediately loses credibility by pronouncing that EMU stands for "European Monetary Union". It doesn't, despite popular belief to this effect. It



means "Economic and Monetary Union". He loses still more credibility by lumping together such firms as Philips, IBM, Siemens and Rover as if they project a single face about how they intend to handle the

I recently attended an IBM seminar at the company's South Bank premises and it was quite plain that it will deal in whichever currency its customers and suppliers

choose. So while it may be strictly true to say, as James Taylor states, that these companies will "start to use the euro for invoices and payments", it's a very different "start" between the various members of the group he mentions.

STEPHEN MUIR

stephen@task.force9.co.uk

It was not intended to be that sophisticated, Stephen. Those James Taylor replies > It was not intended to be that sopinistication, corporation for the better-known proponents, not to represent any kind of grouping apart from their shared intention to embrace the euro sooner rather than later. Nor was it intended to suggest a mutual approach or agenda. Indeed, their only other common ground is that as multi-national corporations they might be expected to be just as enthusiastic about EMU with the dollar.

Regarding your first point, you are absolutely right, although I plead that using "European Monetary Union" to differentiate participating nations from the rest of the European Union is seductively convenient, as well as helping to fix the blame. I'm sure that just as the Community Charge became the Poll Tax, the EMU will eventually suffer a similar vulgar translation. But, as you indicate, at this stage it was an inexcusable solecism.

MAKING THE BEST OF THE BUG

What is all this never-ending fuss about the Year 2000 Millennium Bug? It isn't really the problem it's made out to be. When affected PC users' clocks revert to an earlier date at the start of 2000BC, it will simply have the advantage of allowing them all to believe they are living in the far more sensible past, before daft things such as the Community Charge, VAT, the ECU, pornography over the net or the Millennium Dome were even dreamt of. Business productivity should actually increase, not lessen, due to the marvellous feeling of nostalgia and euphoria it will elicit in staff. It won't matter to most home PC users, either, since their computers will still work they just won't show the correct date. So what? I have had a PC for three years and its clock has never worked properly anyway, but I've done all my work on it, as a self-employed person.



E-ASY MONEY — COMPUSERVE REPLIES

I read with interest Barry Fox's column (Straight Talking, PCW Jan '99). I would like to point out that CompuServe is not the only company suffering from spam messages, some of which have fraudulent intent. In fact, I can say with a great deal of confidence that CompuServe members receive far fewer spam messages than those of other services, due to the sophisticated anti-spam technology we employ. It is not common practice for businesses to disclose the methods they use to protect their



customers, but I can assure Barry Fox that we work closely with the relevant authorities to ensure that the integrity of our service and our members is not compromised. The decision whether or not to prosecute is not

always within our control, and in any case, I would rather that we prevent fraud. So, I applaud Barry Fox for his contribution to educating internet users about potential problems. On the subject of paying for the CompuServe service, he is a little wide of the mark. Industry analysts such as Ovum and Datamonitor have commented that online service providers like CompuServe have little to fear and I am happy to report that their forecast is correct. After the initial burst of activity, attrition levels have dropped dramatically: less than five percent of our "retiring members" are going to FreeServe or similar. Another interesting statistic is the rather larger number of customers asking for support in trying to re-install CompuServe's software which is, in some circumstances, made inoperable when FreeServe is installed. This is a privilege for which they would have to pay FreeServe £1 a minute if they were to call on them. Does CompuServe still seem expensive?

MARTIN TURNER MANAGING DIRECTOR, COMPUSERVE UK