

MAC TO THE FUTURE: Watch this space: the 21st century wearable computer

Watches became largely redundant with the rise of the ever-present mobile phone, but could they be poised for a comeback as wearable computers?

There was only a small window in time when Casio calculator watches were cool. That window was a Wednesday morning in September 1994, from 8:50am until 9:45am, when it just so happened that you'd find me in a GCSE maths lesson. Several years before, I had sworn a blood-oath against maths in all its forms when I was forced to learn my times tables. 'What's the point of memorising five times seven?' I'd moan. 'When am I ever going to be without a calculator? They'll be everywhere.'

And so my prediction came to pass in late August of 1994, when during the annual school uniform shopping expedition (scratchy

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white shirts? Check. Hateful PE kit? Check. Ugly Head holdall? Check.) I managed to convince my mum to get me a calculator watch. Now I would never be without the ability to absent my mind from maths.

Sadly, once I started GCSE maths, I realised there was no button on the watch for factorising quadratic equations or working out percentages, ratios or angles. Also, the buttons were absolutely tiny, so even when I had actually worked out what I needed to work out, I would invariably press the wrong keys and get the wrong answer. It was to put children like me out of their misery that they started giving marks for 'showing your working out' and not just the right answers. My apologies to all who read the Daily Mail and bemoan the death of standards in schools.

It's unlikely Steve Jobs' hardline stance against buttons comes from a similar experience, but my time with the calculator watch does make me sympathise with him. Of course, rubbish buttons weren't the only reason the popularity of the calculator watch declined: just like all watches, it was the mobile phone that proved its undoing.

Once people started carrying a phone all the time, there was no need for a watch. As time has progressed and phones have

advanced, they've not just duplicated all the features of watches and calculators, but a whole range of devices: still and video cameras, lo-fi voice recorders, mobile emailers, personal stereos, radios, A-Z maps, calendars, address books, newspapers, televisions, computers and more.

Generally speaking, it's held to be a rule that this consolidation and absorption is the rule to which all technology will bend. Programmer and entrepreneur Paul Graham wrote a luminous essay about tablets (paulgraham.com/tablets.html) in which he referred to this as 'ephemeralization':

'In 1938 Buckminster Fuller coined the term ephemeralization to describe the increasing tendency of physical machinery to be replaced by what we would now call software. The reason tablets are going to take over the world is not (just) that Steve Jobs and co are industrial design wizards, but because they have this force behind them. The iPhone and the iPad have effectively drilled a hole that will allow ephemeralization to flow into a lot of new areas. No-one who has studied the history of technology would want to underestimate the power of that force.'

Beautiful and simple writing such as this often holds those properties because it's also true. If phones and tablets are, like Pacman,



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▲ The Tik Tok is a crowd-sourced product that allows you to wear a new iPod nano as a watch.

going to swallow more and more of the world, starting with communication and going from our keys to our money, where does this leave the idea of the wearable computer? Being honest, it wasn't just the idea of having a calculator always with me that I liked about the Casio C-80: it was also because wearing technology felt futuristic. Far more futuristic than simply carrying stuff (and, as I had learned from *Star Trek: The Next Generation*, no-one in the future will have pockets anyway).

The inimitable John Gruber recently posted about the lovely TikTok (lunatik.com/tiktok), a crowd-funded project to create a wriststrap mount for the new bitesize iPod nano. For \$40 (about £25), you can buy a rubber strap and chassis for turning the nano into a 21st century calculator watch. Gruber's conclusion? 'Just playing with the thing makes me realise that wearable computers are inevitable.'

Engadget reviewed the nano as a watch and came to a similar conclusion, writing that 'putting a multitouch display on your wrist opens up an entire world of limitless wearable computing possibilities, and we're sure we haven't even scratched the surface of what could be done.'

Here we have two knowledgeable sources going against the grain: not that they're predicting the death of the smartphone, but they're seeing a purpose for a wristwatch

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beyond being a style statement or a simple comfort rooted in past experience.

Aside from the coolness factor, the main use both Gruber and Engadget highlighted for a wrist-mounted nano was receiving alerts or notifications from the iPhone. Indeed, at first glance, this seems both attractive and useful. Rather than have to dig in your pockets for the iPhone, hit the home button, slide to unlock, enter the passcode and click mail, you can just look at your wrist.

Unfortunately for this theory, the only reason you actually need to go through this palaver is that the notifications system in iOS



▲ Casio calculator watches are fondly remembered by geeks as early examples of wearable technology.

is rubbish. It's hard to comprehend just how rubbish it is unless you've spent some quality time with a recent Android phone.

I recently got my hand on a Nexus S. It represents Android beautifully: as a device, it's a mixed bag, with a great screen and horrendous plastic back. There are lots of options screens, Android in general just doesn't feel quite as well designed as iOS, and the Android Market is to the iOS App Store as a school playground scuffle is to the Oxford debating society: amateurish, unfriendly and chaotic. It will grow up, though, and there are times when you can recognise real potential.

Where Android shines is in its notifications: press one button on the Nexus S to wake it from sleep and in the top status bar (the area where the clock lives on the iPhone) you'll see a Gmail envelope for new emails, a blue square if your Foursquare friends are out and about – in fact, the symbol for any app with updates if it's written to support it. To investigate, you simply unlock the phone and pull down the bar (a bit like a blind) to see a tertiary level of detail: the header of the email, the names of the people who are checking in, the number of new stories on a news site and so on. You can then go into the relevant app if any of that information matters.

Compared with the iPhone, which puts up a big blue box for whatever happens, Android a far more sophisticated multi-level system

that enables you to keep in touch with what's happening, but very much at arm's length. You only need to go into the app itself if you find the update interesting, not to actually find out what the update is.

When the iPhone came out, many people wrote about how it seemed to have come from the future. In fact, the genius of the iPhone may well be just how 'of the present' it is. Its design features a stunning attention to detail, but much of what it does feels familiar and comfortable in terms of the cultural and design norms of the last 20 years – as opposed, say, to the more radical nature of the web. On the iPhone, you (basically) run one program at once. The songs you have on it are yours that you've bought or downloaded. The phone syncs to a computer. You buy apps and they run when you touch them. They close when you press the home button, and so on.

Android's design is far more radical. It's all about services, as opposed to specific experiences. Android is at its best when everything about an app is really a service, running all the time, connected to the web's endless sea of data, and the phone is just a terminal you use to dip your toe in.

The phone isn't an object with products on it: it's a piece of you, an outboard brain that's the interface between physical you and network you (your emails, check-ins and data). This is what a real 21st century wearable computer is – something that's as intimately a part of you as the clothes you wear – not an iPod worn as a watch.