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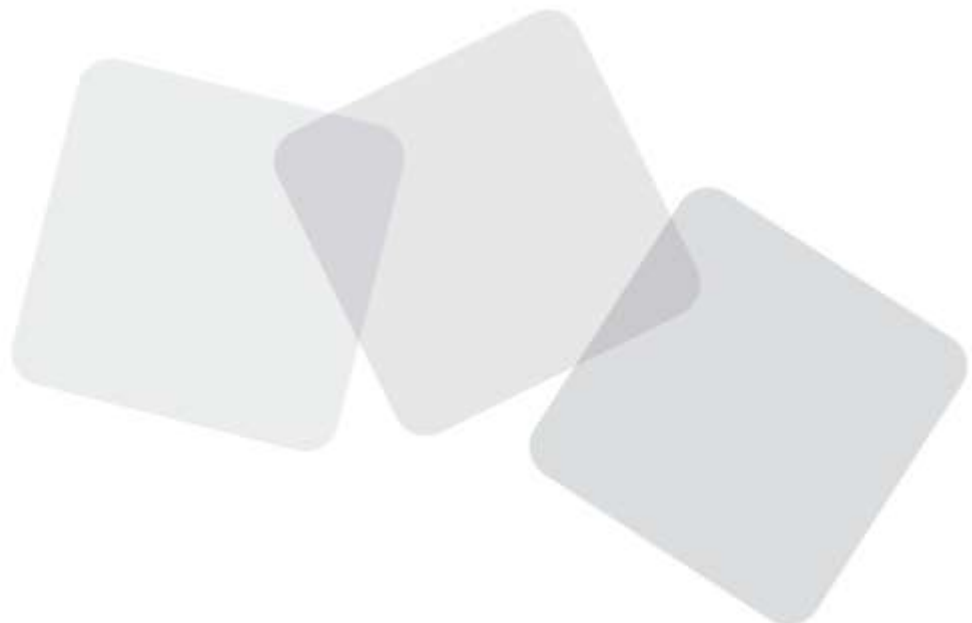
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TOMORROW'S WORLD

Or 'Where We're Going, We'll Still Need Roads'

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Or 'Where We're Going, We'll Still Need Roads'

Welcome to the second decade of the 21st century. The last ten years have seen some rather large technological strides, particularly in relation to the now all-pervasive Internet, though admittedly you might be slightly disappointed if by this point you expected to be whizzing around one of our lunar colonies with your personal jet-pack. Predicting the future is a tricky business, as some things will progress much faster than you imagine, others much slower, and then there will be those things that pop up entirely unexpectedly and revolutionise the world. Still, never ones to be perturbed by a challenge, we're going to attempt in this article to look at some of the ways we think the technological world will change in the next decade. In an effort to try and make this as 'realistic' as possible, we'll steer clear of anything particularly outlandish, and will ignore those conspiracy theorists who believe the world is going to end in 2012.

PREDICTION #1: THE PC AS WE KNOW IT WILL BE IN TERMINAL DECLINE.

When we think about computers today, what generally springs to mind is still the late-90s-style baize box, stuck away on a desk making a loud whirring noise whenever anyone comes near it. Offices are full of these, many with huge CRT monitors that take up most of your available space. In ten years, these are likely to seem as prehistoric as those green-screen computers you see people working on in 1980s movies. Even now we have netbooks and other ultra-small form-factor machines that can provide almost all the processing power that most people need.

In the world of business, and even for home use, your big, bulky computers are probably not even breaking a sweat 95% of the time. How often are you doing anything more arduous than writing a document, replying to an e-mail or browsing the Internet? For such menial tasks, your standard desktop computer is ridiculously over-powered. Why have that hulking great thing sitting there soaking up electricity when you could use a low-power device that does everything you need?

We're not quite there yet: in general, netbooks still lack the grunt to run several applications at once, and you wouldn't want to try and do any photo-editing on one. With the advent of multi-core, low-power processors and advanced integrated graphics chips it's only a matter of time before pretty much everything most people want to do with a computer can be achieved in a tiny box, albeit with a nice large screen.

PREDICTION #2: TOUCH-SCREENS WILL BECOME ONE OF THE MAIN METHODS OF INPUT.

The staple of science-fiction programmes for decades, touch-screens have actually been around since the late 1960s, but it's only in recent years that they've become particularly prominent. One of the main reasons for this has been the rise of the smart-phone (we'll come onto those in a bit) and, perhaps in particular, Apple's iPhone.

Touch-screens used to be mainly associated with PDAs, and usually required you to prod at a slightly spongy-feeling screen with a plastic stylus. User interfaces were also somewhat limited by the fact that in earlier iterations of the technology, it was not possible for devices to detect more than one point of contact at a time,



nor to determine the force with which a user was pressing. Anybody who has used a multi-touch device such as the iPhone will know that this has now changed, and that nowadays users can sweep their greasy fingers over screens with gay abandon.

There's currently a big drive towards tablet PCs, which are essentially large hand-held computers that just use touch-screens. Again, Apple are leading the commercial drive for these with the recently-announced iPad, but other manufacturers are also building Windows-based devices (and, indeed, Windows 7 comes with built-in support for touch-screen interfaces).

Many people debunk the idea of touch-screens, believing that they can never supplant the traditional keyboard and mouse. Well, to an extent that's true: you're never going to want to throw your keyboard in the bin and be interacting with your computer by leaning over the desk to tap on your monitor. However, outside of the office environment the touch-screen will become ubiquitous. Why use a remote control for your TV which has lots of single-function buttons on it when a touch-device can provide context-sensitivity and enhanced features? Why sit at home with a big laptop on your knee when all you want to do is comment on someone's Facebook status? Why have a thousand buttons on your car dashboard that functions that you hardly ever need (like changing the stereo's environmental sound settings from 'Church' to 'Auditorium')?

The big, big advantage of touch-screens is their simplicity. We've all generally become accustomed to interacting with computers in a very abstract way, clicking our way through countless menus and icons to get to what we want. This is fine for those of us who are used to it, but have you ever tried explaining to somebody who has never used a PC how they do something as simple as move a file from 'My Documents' to their desktop? Touch-screens, though of course still not perfectly, help to remove a layer of abstraction from the interactive process. Anybody who has ever witnessed a computer-shy relative take hold of a touch-phone and within minutes be zooming in on photos or playing music will be able to testify to the advantages of such simplicity!

PREDICTION #3: EVERY PHONE WILL BE A SMARTPHONE, AND WE'LL ALL HAVE ONE.

As recently as 2000, you were lucky if your mobile phone could display a five text-line WAP site or play a polyphonic ring-tone. There was a big distinction between your ordinary mobile, which could make calls, send text messages and play the odd Java game, and a smartphone, which could e-mail and do other basic tasks that you might expect to be more the remit of a computer. Smartphones were the preserve of business executives and IT consultants, and they were generally the size of a pocket dictionary with a QWERTY keyboard that would give you RSI as soon as you looked at it.

Today, things are a little different: almost every phone has 'smartphone features', with only the most basic models lacking e-mail functionality or even a web browser. The higher-end mobiles on the market now can provide almost the same Internet browsing experience as a fully-fledged computer, although admittedly the screen is somewhat smaller. Within the next few years it's easy to see that mobile phones will become more and more the centre of our increasingly connected world, and the facilities they offer will become more and more complete (some of them may even still be able to make phone calls).

Given that most of us spend a good proportion of our working lives just reading and replying to e-mails, it isn't difficult to see how our mobile phones could become our main work tool.



Will the mobile telephone replace the landline in the next ten years? Probably not, but there will be increasing numbers of households and businesses who exclusively use mobiles. The main reasons preventing this at the moment are cost (with calls to and from mobiles still facing higher charges than landlines), and network coverage, which remains patchy in places, particularly outside of the larger cities. As coverage becomes ever more widespread and prices are brought down by both competition and reduced technology costs, it'll be more and more likely that many people will forgo the need for a home phone at all, perhaps only keeping their landlines for broadband connections.

PREDICTION #4: EVERYTHING WILL BE INTERNET-CONNECTED.

Well, not *everything*; there's very little to be gained by hooking your kettle up to your broadband connection, for instance. Still, there's no escaping the fact that more and more devices are going to be 'on-line'. Yes, a few years ago there was lots of talk about how you connect your fridge up to the Internet and it'd be able to download recipes and inform the supermarket if you were running out of milk, but this didn't really take off due to the fact that it was utterly pointless. Now, though, some real thought has gone into what we can use the Internet for on devices that aren't traditional computers.

On-demand TV is one of the big driving forces here. The ability offered to us by services such as the BBC iPlayer to be able to catch-up on missed programmes that we may not even have realised were on has revolutionised the medium to an extent where it's now difficult to imagine how we coped with a handful of TV channels and a VHS recorder. Such on-demand services have been confined to PCs, consoles such as Sony's PlayStation 3, or bespoke platforms like Virgin Media's cable boxes, but this is starting to change. Later this year the first TV to have iPlayer software built into it will launch. High-end TVs have had Ethernet ports built into them for a while, but it's only with services like this that'll they'll become useful for anything more than downloading the occasional firmware update.

High-definition BluRay players, aside from providing film studios with a reason to make you buy again all the movies you've only just brought on DVD to replace your aging VHS tapes, have been designed to provide Internet-linked content. Whether it's worthwhile or not, you'll be able to purchase and download additional content based on the disc you've got in the machine.

The latest high-spec cars from the likes of BMW and Mercedes-Benz are also including Internet capabilities, with the car connected to the mobile 3G data network. It's a matter of opinion whether it's a good idea for people to be able to Tweet whilst they're driving, however...

PREDICTION #5: THE VIRTUAL KINGDOM WILL RISE.

The likes of Facebook, Twitter, Bebo and MySpace all represent forms of virtual communities. Admittedly, these virtual communities are usually populated with networks of people who know each other in real life, but the advantage of being able to easily talk to whole groups of your friends instantaneously rather than having to call them up or drive round to their houses is obvious. Some people are addicted to Facebook and its ilk, other people believe them to be a sign of increasing social degradation, and still others don't really have a clue what they're all about and don't particularly care. Regardless of your opinion, they're not going anyway, and all they're only going to get bigger.

In a way, the 'social networking' revolution of the last five or so years is a natural progression of the route technology has taken in transforming the way we communicate since Alexander Graham Bell first transmitted his rendition of 'Mary



Had a Little Lamb' across a telephone wire¹. It used to be the case that there was no way of directly communicating with our friends and colleagues who lived long-distances away other than by letter. After the telephone, e-mail and the other bits in-between, we can now communicate with people pretty much anywhere in the world at any time for little cost. As a result, our local communities have become less important (which probably goes some distance towards explaining why many people don't even know the names of their next-door neighbours). This is only set to increase this decade, as the 'virtual community' becomes increasingly prevalent. In some ways, this will undoubtedly be a good thing, as we can more readily stay in touch with the people we know and care about. On the other hand, there's a level of support we can get from those who live nearby that can't be replicated.

OFF WE GO...

And so we boldly head off into the second decade of the 21st century. We've listed a few things here that we think might happen, but really: who knows? The future is an uncertain place, as anyone in high-risk investment banking will tell you. Whatever occurs, though, it'll be interesting. See you in 2020...

¹ Okay, okay: it may not have been Bell who invented the first telephone, it may have been Antonio Meucci or Elish Grey, but their PR obviously wasn't as good as Bell's so he's the one who gets remembered.



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DBL is an independent software development company specialising in custom applications. The company has a background in computer-aided design within the mechanical engineering sector, and was established in 1995 to capitalise on the demand for IT support from engineers wanting to use a company that 'spoke their language'. DBL has since gone on to build a long-standing base of clients and now has considerable experience in the manufacturing, distribution, service and finance sectors.

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