

New technology, new society

The pace of technological change is relentless. Graham Whitehead of BowZer productions has seen the future and it's very different...

I went into a local university near where I work to speak to one hundred students in one of those big, banked lecture theatres. I asked them one simple question, "Think back, what was not in your home twenty-five years ago?" There were no microwave ovens, there were no CD players, there were no Walkmans, there were no computers, there were no games machines, there were no video recorders, probably not even central heating. It makes you think, doesn't it? There weren't even any decent pocket calculators. Then I asked them another question, "Do you want to see the pocket calculator I had when I was at university in the late sixties?" One hundred heads nodded in agreement. So I showed them a slide rule. They were totally incredulous that anyone could use stone-age technology to do mathematics and calculations. But this was the technology of that time.

In the near future we will see much greater changes in telecommunications and IT systems. For over one hundred years we have become accustomed to the telephone system with its exchanges. It's a system that allows you to dial a number and the network translates that number to a routing through the network to the far end – from one point to another point. You then have a dedicated connection for the duration of the call.

When computers were connected to the system, we forced them to talk in just the same way as humans – dialling numbers on dedicated routes. Computers hate having to talk like humans. In an IT system the computer cuts the information into small packages, each with a header (the address on an envelope) and a load (the letter in the envelope). A computer would dearly love to be able to spray these packages throughout the network, and the machine at the far end collects, orders and presents the information to the human.

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Soon, instead of voice, vision and data being three separate information channels on three separate systems – they will be one information stream on one system. There will be a need for gateways in the new IP system to ensure that speech is treated with priority – your ears are so sensitive to delay. Soon the possibility of point to multi-point communication will be an everyday event. Even multi-point to multi-point activities will be possible. We will cease thinking of moving *information* around a system and start thinking of moving *experiences*.

And that is why BT is no longer a phone company. We are now a global information moving organisation. The joint venture agreement between ourselves and AT&T is creating a company that will create the open IP technology platform, which will in turn allow others to mount applications on the platform to allow the passing of packets of information. And do be careful; IP does not stand for Internet Protocols – it stands for *Internetworking* Protocols! The internet of today is only the first step along the journey.

Soon I see the adults of the rich countries – and most certainly all of their children – wearing many electronic devices. These could be computers, organisers, phones, pagers, games machines, and through this packetized mobile communications system they will be ubiquitously, continuously and effortlessly connected to the latest information on any topic. This will revolutionise our attitude to information and the way we work.

What I want, in the future, is a really smart desk, a desk that looks at me, recognises me. It therefore knows who I am and where I am and brings all my information to me wherever I am. It also looks after all my security by scanning the coloured part of the eye, the iris. Because this is a biometric we can have enhanced security. I won't have to use PINs or Passwords any more because we will need to put increased levels of security in systems as we start passing more and more information across networks. This desk listens to what I say and understands me without me having to train my voice to it, or it to my voice. In our research laboratories we have created a machine that understands any person speaking in English, irrespective of age, gender, ethnic background, local accent, head cold etc. Suddenly, I can talk to a machine and it understands me. Now I can get rid of the mouse, I can get rid of the keyboard (both of which have held us back for too long) and I can start really relating to machines. I also want this machine to be so smart that it starts talking back to me, in a very

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natural sounding voice, and this has been done in the Laureate speech product. Now I can start communicating. With desks like this I can see us fundamentally changing the way we work. I will no longer need an office, I can work from anywhere using such devices.

As a consequence, I see the centres of our cities changing - less office space and more domestic and leisure space in the centre as people and the softer technologies spread out into the urban areas. Of course, if you are building cars you need to be in a factory where the car is being made. But as more and more people start working in the softer technologies of the information age we will start working whenever, wherever we want and possibly move around the country or even around the globe. We no longer need to be in a fixed location and it is going to make a big difference. I see in the very near future that we will no longer have one job or work for one company. The idea of a job started in 1840, just after the industrial revolution. Before that time we had been in a barter system or a cottage industry system. Suddenly there was a transformation and we started working for one employer. This became progressively more and more the norm, until the 1950s and 60s when the concept of a job for life was created. You always worked and only worked for one organisation or company. I see the way we work changing drastically and reverting back to a more open, free and “consultancy” based operation.

I see people working for more than one company, in maybe a rapid succession. Perhaps we could work for 15 or 16 companies during our working lives and it will be thought rather strange if you only work for one company. In the past it was considered odd if you consistently changed jobs. I even see people working for different companies at the same time.

In our business, we have intelligent national networks that enable call centres in one part of the country to deal with customers from another. But the modern call centre is only a beginning. The new communications networks will allow you to work from anywhere at any time. Companies will be able to recruit, not just from the local area, but across the country or even worldwide.

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And just imagine the human resources issues when we all work in virtual teams! How will you, as a manager, be able to control staff that you never come in contact with? How will you motivate staff that you never meet? As technology changes the way we work, we will need to rethink absolutely everything because the very nature of work itself will change. Until the next revolution, that is.