

## *Just Imagine.....*

... a world in which all the adults of the rich countries – and most certainly all their children – wear intelligent clothes! They are festooned with small electronic devices – phones, pagers, organisers, computers, games machines etc. And all these devices are not only continuously connected to the most up-to-date information from any where on the globe, but networked together around your body!

This might sound unrealistic but it is the potential future. This is the aim of the Bluetooth project - a consortium of 5 “promoters”, Nokia, Ericson, Intel, IBM and Toshiba. BT is seriously considering becoming the 6<sup>th</sup> promoter of the system that could give you up to an 80MHz connection between these devices on the 2.4GHz band. The BT involvement would offer the potential to connect the *very* local network out into the public networks.

As the 100 year old telephone network gives up its old fashioned central exchanges and moves into the new IP (and that stands for *Internetworking* Protocol) technologies almost everything becomes possible. In the 1990’s data started to be moved in ever increasing quantities – but it was forced across the old telephone networks which had been established to give good quality service to humans. Computers do not like to talk across networks as humans do. Computers pass information in small packets, each containing a header (like the address on an envelop) and a content field (like the letter in the envelop). They dearly like to spray these packages widely across the network, and each packet using the information in its header finds its own way through the routers of the network (which work 15 times faster than telephone switches) to the far end. The machine at the far end then patiently waits for all the packages to arrive, orders them and presents them to the human. Do remember that a special event happened in the BT Network on the 12 November 1998 – that was the day the network passed more data calls (machines talking to machines) than Voice calls (people talking to people). Now, over the next few years the number of Voice Calls will increase slowly, but steadily, whilst the number of Data Calls will disappear like the proverbial space-rocket! During the last 20 years it has seemed reasonable to force the computers to talk on the human friendly network – in the next few years it will be reasonable to force the human to communicate over the computer friendly network. In practice the humans will not notice the difference because PIGS (*Public switched telephone network to IP Gatekeepers!*) will give the human voice signals priority – computers do not mind waiting for a short while.

In this manner an information request from the computer that you are wearing would be as simple as dispatching a single packet, or two, over the new Global Radio Packet System (an extension of the current GSM), or eventually the Universal Mobile Telephone System – the

## *Looking at the Future Slightly Differently*

3<sup>rd</sup> generation mobile system that could deliver up to 2 Mbit/s into your hand – and that is a good quality moving television picture!.

I know – you have heard it all before, this has been the dream since the dawn of computers... But the proof is in the way the (boring old) telephone companies are suddenly merging interests with the (new zany) computer network companies. At first sight this seems a strange marriage, but it is happening because both sides see it as the only way forward. For example “Microsoft grabs big slice of cable (a move that could change the face of the media market)” was the lead headline in the Financial Times May 7th 1999, announcing Microsoft’s 30% bid for Tetewest.

The advantage is in the fact that a good computer network is stable about 99.8% of the time, and a telecommunications network has a performance in excess of 99.9998%. This difference might sound small, but it is in practice huge. Just think, when was the last time you had a computer system crash, and compare that with the last time you picked up a phone and dial-tone was NOT instantly available? When was the last time you got a “wrong” number and did not instantly assume that it was your fault for mis-dialling?

Just imagine..... continuous connection to data, anywhere, at any time, in any quantity, and a blending of HiFi sound, television quality pictures, and all whilst you are walking down the street..... Mind you don’t bump into... whoops too late!