Gordon Laing looks for the technology with the right connections to control home networking.

The missing link

I reckon the big thing over the coming year will be home networks. Very soon there'll be home entertainment systems where one box will have good reason to speak to another and share its capabilities: 'I had no idea you could receive TV and record hours of it,' said the PC to the VCR – to which the VCR replied: 'Hang on a minute, you're saying you can connect to any other computer in the world?!'

I recently managed to grab a few minutes with Bob Metcalfe , founder of 3Com, inventor of Ethernet and popular pundit. The obvious question was 'Bob, what networking system will connect devices in the home of the future?' Metcalfe pondered for a moment, looked me in the eye and said 'Ethernet' before striding off to more interesting interviews. I felt a little disappointed, and for a fleeting moment considered Metcalfe to be a one trick pony. But then again, maybe he's right. Ethernet is cheap, easy to implement in modern PC operating systems, and most impressive of all, is a widespread, proven technology that works. It's also available in fast and wireless flavours. Trouble is that no-one seems to be in any hurry to fit it to the back of your TV.

It's CERTAINLY TEMPTING to think of a load of consumer electronics connected only by a single daisy-chain of FireWire

I still believe FireWire has a strong chance of becoming the backbone of future home networks. It's quick (supporting up to 400Mbit/sec), easy to use, allows devices to be connected and disconnected while they're switched on, and – most crucially of all – is a peer-to-peer system, not requiring a host PC or Mac to control the network unlike, say, USB.

It's easy to lose sight of this important capability, especially as we enter another numbers game. Keen to ensure we appreciate USB, its members have announced that version 2.0 will boast speeds up to 480Mbit/sec, and be with us by, er, the end of year 2000. The 1394 Trade Association, which was last seen looking worried at Intel's Developers' Forum, recently countered at the Comdex show that FireWire would be finally upgraded to 800Mbit/sec at the beginning of 2000. Numbers aside, remember that FireWire is the only digital networking technology that can work peer-to-peer and is currently found on both consumer electronics and PCs – albeit only a handful of them so far.

Panasonic has, however, released two very exciting products in the US: an HDTV set-top box receiver, and HDTV D-VHS recorder, both fitted with FireWire. These really are a nod to the future, where a chain of FireWire-equipped devices share digital facilities as if they were one single super-system. The concept of using FireWire as the transport was actually defined as long ago as 1988, and called Home Audio Video Interoperability, or HAVi for short.

But what would control this system? While I believe the PC will be in there somewhere, for enthusiasts who desire power and application flexibility, I reckon the control centre of most home networks will be something like Sony's forthcoming PlayStation 2. This miracle console plays DVDs, CDs, fantastic games, boasts FireWire and USB ports, and looks pretty cool too. I'd sooner use this to quickly access my email than wait for my PC to start up.

It's certainly tempting to think of a load of consumer electronics connected only by a single daisy-chain of FireWire. But beyond DV camcorders, what consumer boxes are currently available with FireWire in the UK? Sadly current DVD players do not feature FireWire outputs for fear of unprotected digital piracy. Our Digital TV set-top boxes currently receive and decode MPEG2 but don't feature FireWire ports either. I remember removing an engineering panel of an early digital TV box and finding a port 'for future use' which looked pretty much like FireWire to me.

Even if we could link all these devices using FireWire, the transported data may not be in the appropriate language. DVD, Digital TV and Panasonic's D-VHS all employ MPEG2, whereas digital camcorders currently use a format called DV, which is not dissimilar in practice to Motion-JPEG. They are not compatible, and no amount of FireWire ports will let a DV Camcorder record the digital output from a DVD player or Digital TV set-top box. Perhaps what we'll need is some kind of powerful processing box to convert video formats across the home network. Will the mighty PlayStation 2 rise to the challenge? Don't throw away your PC just yet.

gordonl@pcw.co.uk