

the bandwidth required to carry a television picture could carry 3,000 separate telephone conversations.

The capacity of a transmission medium is perhaps best expressed in terms of the number of telephone conversations it can hold. The largest capacity cable used by British Telecom at the present time is capable of handling 20,000 conversations at once, but in experimental tests BT has successfully evaluated co-axial cable as high as 500MHz — making it potentially capable of carrying 167,000 conversations at once. The cable itself is one cm (3/8th inch) thick. Contrast that with fibre optic technology, in which a single strand of glass thinner than a hair offers the ability to carry up to 10,000 telephone conversations.

The communications hardware is already on the market and it would be a simple matter to network any town or city. Let us consider how we could set up a community computing network based on the BBC Model B Micro, using Acorn's Econet. When we looked at Local Area Networks, we noted that the furthest any workstation could be from the network controller

was 500 metres (1,650 feet), which means that our network can cover a circle one kilometre (1,100 yards) in diameter. We saw also that it can accommodate up to 254 members, leaving one station dedicated to file serving (handling the communal disk) and another to controlling the printer. But if we were to reserve one further station as the channel of communication to a second network, then a fairly simple piece of programming would allow us to link two networks together. The link would require two machines dedicated to passing messages from one network to the other, communicating via their respective parallel ports. The more machines we were prepared to reserve for this purpose, the more networks could be interconnected.

Of course, this is very much a makeshift solution to the problem of wiring a community together, but if it proved popular it could be superseded by a purpose-built network link. However, it is unlikely to be implemented since it requires all its members to use the same type of microcomputer. To be really effective, a network of this type must be completely 'transparent', which means it must allow a Spectrum, for example, to communicate with a Dragon 32. This requires a central system controller to handle the conversion between the various protocols used by different makes of computer. The controller could also be the link point into Prestel and other viewdata services, the banking system and building societies, the Health Service and other public utilities, and all the other areas of society that have been computerised without any consideration for machine compatibility.

Who would provide the funds to install and run such a service? The British experience suggests that this is the stumbling block. The British government, when it first made proposals for a cable television system to be implemented, emphasised the benefits that such a system would bring to the information technology industry, and consequently a number of the potential users of such a system set up research projects. A national supermarket chain even went so far as to set up a pilot tele-shopping scheme of its own to test its feasibility and the public reaction to it. The scheme did not survive even its short trial period, and the same conclusion — that such services were rather unpopular — was reached elsewhere.

When the draft bill proposing cable television was presented to Parliament, it still contained references to computer services such as tele-shopping and home banking, but said more frankly that the cable authority would be only 'expected to encourage the provision of two-way computer services'. The emphasis had thus changed from information technology to entertainment technology. In fact, cable operators will be specifically forbidden to offer any form of telephone service, even video conference facilities, though a draft strategy paper envisages the cable network eventually taking over all telecommunications services.

COURTESY OF MTV

Satellite Station

MTV uses a satellite distribution system to beam programs to its 1,650 affiliates, who then despatch it via cable to the homes of the 13.5 million individual subscribers across the continental United States. MTV provides 168 hours of programs every week, all with stereo sound. Each hour contains eight minutes of advertising. Though the service is strictly one-way, the company does encourage a degree of audience interaction via charge-free telephone numbers. With the introduction of two-way cable traffic, this kind of instant audience reaction will become far more commonplace

