

COMMUNICATIONS Broadband – the digital superhighway

The integration of high-speed data processing systems, TV and the processing power of the computer is already transforming the way we live. The next generation – broadband – will turn this from a one-lane road into a 21st century superhighway conveying almost limitless amounts of information

Phase 1: Wiring the world

All new telephone lines are installed as digital fibre-optic networks. These digital networks not only have sufficient fibres to fulfil all existing telephone needs but have spare, or 'dark', fibres to cater for future 'Broadband' services

What is Broadband?

Since the invention of the telephone in the 19th century, telephone lines have been made of copper. The fastest communications speed using copper cable is achieved by ISDN (Integrated Services Digital Network). This is called **Narrowband ISDN** and can handle up to 64,000 bits of data per second.

By comparison, fibre optic cable enables ISDN to handle over 600 million bits of data per second – almost 10,000 times faster. This is called **Broadband ISDN**

Phase 2:

Installing city-wide networks

Data is split into small packets, or 'cells', to be routed to the customer. Metropolitan Area Networks (MANs) – high-speed, 'intelligent', switching networks – transmit the cells by the best available route

Connections to other networks

Phase 3: Bringing 'Fibre to the Home'

The ultimate stage – when optic fibre superhighway actually enters the home, office and factory

Broadband services for business and the professions

Broadband services for the home



Computer-aided design
Computer-aided manufacture

Video conferencing and virtual reality

Multimedia workstations linking voice, text, graphics, still and moving pictures

Medical imaging and remote surgery

Access to supercomputers to solve 'grand challenges' such as predicting global climate or molecular structure of new drugs

Colour facsimile and 3-D facsimile

