Next Generation Access Glossary

21CN: BT's upgrade of their core network (the backbone of the network).

Access network: The part of the network that connects directly to customers from the local telephone exchange.

Active Access: Wholesale access to the network infrastructure through electronic equipment.

ADSL (Asymmetric Digital Subscriber Line): A technology used for sending data quickly over a conventional copper telephone line. It is used in current internet services with download speeds up to 24Mbit/s.

Backhaul: The middle of the network, this is a high capacity line which links the core network with local exchanges. This is the infrastructure beyond the local exchange
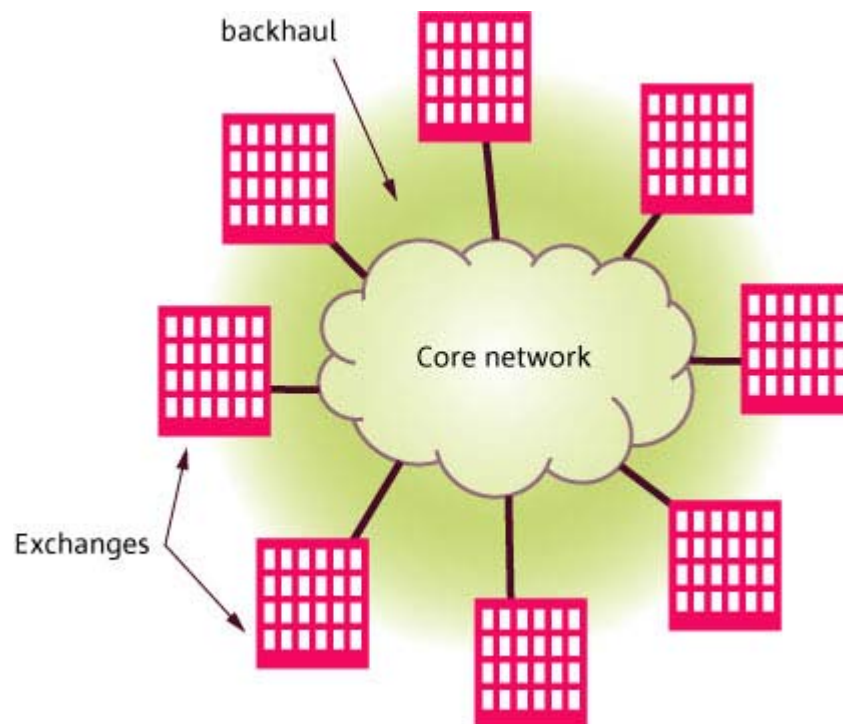
Bandwidth: This is the measure of the maximum capacity of a data link in the network.

Broadband: An internet service which provides high speed access.

Business Connectivity Market Review: An Ofcom consultation published in January 2008, with a follow-up in July 2008, in which Ofcom set out a number of proposals in relation to the regulatory framework for retail leased lines or business lines in the UK.

Caio Review: An independent review of next generation broadband, led by former Cable and Wireless CEO Francesco Caio.

Communications Providers (CPs): Companies which provide services to a customer's home, such as telephone and internet services, and which usually own some infrastructure.

Core Network: The backbone of a communications network, which carries different services such as voice or data.

DOCSIS 3 standard - Data Over Cable Service Interface Specification: The international standards for sending data over a cable network.

Ducts: Existing trenches and pipes which hold copper and fibre lines.

Duct Access: When the owners of ducts and trenches let other service providers pay to access them.

Downstream/upstream competition and products: Describes the relative positions of different players, or their products, in the supply of broadband. The most 'upstream' provider is the one that sells the most basic product (for example copper or fibre access). Players who are 'downstream' of this are those that buy this basic product, add their own elements (for example their own electronic equipment to the end of copper links). These are often called wholesale providers. Further 'downstream' still are players who buy these 'wholesale' products, add their own branding, billing and customer services, and sell them on to customers. In practice, one company may do all three stages above, either explicitly or implicitly (for example Virgin Media or BT).

ERG: European Regulators Group of which Ofcom is a member.

Ethernet: A common technology which allows computers on a network to talk to each other.

Exchange: A building which houses electronic equipment that connects telephone calls. Backhaul links from a content provider are terminated here to connect access links to end users.

Gigabit Passive Optical Network (GPON): A shared fibre network architecture that can be used for next generation access.

Fibre-to-the-cabinet (FTTC): An access network structure in which the optical fibre extends from the exchange to the cabinet. The street cabinet is usually located only a few hundred metres from the subscriber's premises. The remaining part of the access network from the cabinet to the customer is usually copper wire but could use another technology, such as wireless.
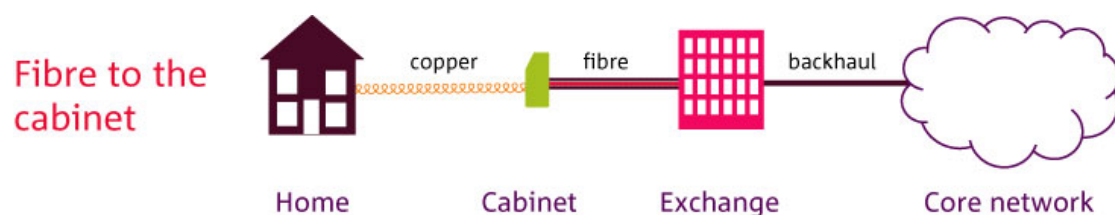

Fibre-to-the-home (FTTH): An access network structure in which the optical fibre runs from the local exchange to the end user's living or office space.

Fibre to the home

Home — Cabinet — Exchange — Core network
(fibre — fibre — backhaul)
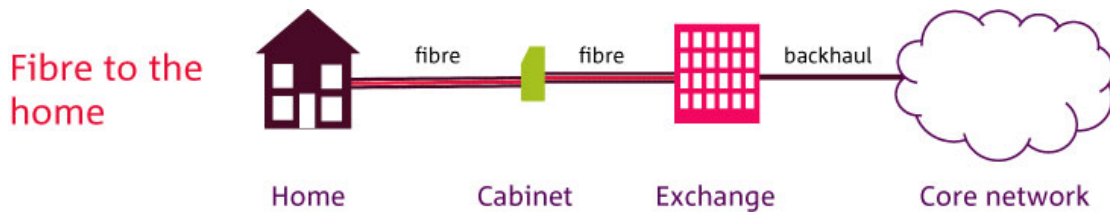
Integrated Services Digital Network (ISDN): A network which allows the digital transmission of voice and data over traditional copper lines.
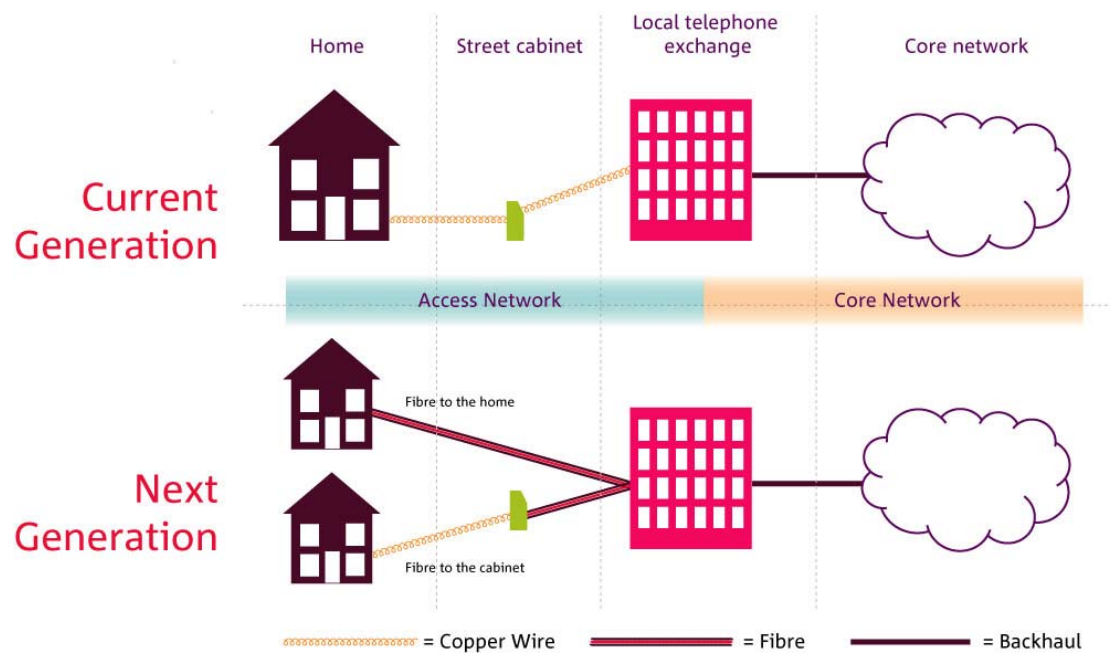
Local Loop Unbundling: When communication providers can gain access to the network by placing their own equipment at the exchange. The communication providers then gain control of the line from the local exchange to the customer and the backhaul runs from the local exchange to their core network.

Local loop unbundling

CP accesses network here

Home — Cabinet — Exchange — Core network
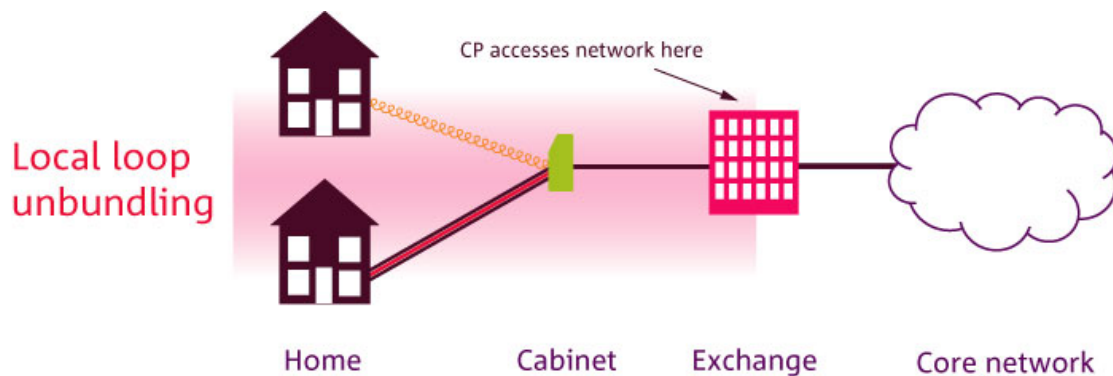
Narrowband: A service which provides internet data speeds up to 128 kilobits per second otherwise known as dial up. This is most commonly used for making phone calls over a copper wire.

Network neutrality: A way of processing data which does not differentiate between different bits of data when it moves through the network, so that all traffic (e.g. voice calls, web browsing, gaming etc) is treated equally.

Next Generation Access (NGA): New or upgraded access networks that will allow substantial improvements in broadband speeds and quality of service compared to today's services. Can be based on a number of technologies including cable, fixed wireless and mobile. Most often used to refer to networks using fibre optic technology.

| Home | Street cabinet | Local telephone exchange | Core network |

Current Generation

Access Network — Core Network

Next Generation

Fibre to the home

Fibre to the cabinet

= Copper Wire ▬▬▬ = Fibre ▬▬▬ = Backhaul

Next Generation Networks (NGN): An upgrade to the core or "backbone" part of the network.

Not-spots: Areas where there is not sufficient broadband access.

NRAs: National Regulatory Authorities, such as Ofcom in the UK.

Openreach Financial Framework: An Ofcom consultation document published in May 2008 which reviews the prices that Openreach can charge other communications providers for its wholesale access telecoms services.

Passive Access: Wholesale access products based on direct access to the physical infrastructure of the network, without the need to connect to electronic equipment.

Regional Development Agencies (RDAs): Public bodies which aid regional development in English Government Office regions.

Service providers (SPs): Companies which provide services, such as telephone or internet services, to a customer's home or business.

Splitter: A piece of equipment used in fibre optic technology which splits a beam of light into many optical signals.

Street cabinet: A green box close to your house that connects your telephone line to the exchange.

Sub-loop unbundling: Like local loop unbundling (LLU), except that service providers interconnect at a point between the exchange and the end user, usually at the cabinet.

Sub-loop unbundling

Home Cabinet Exchange Core network

CP accesses network here
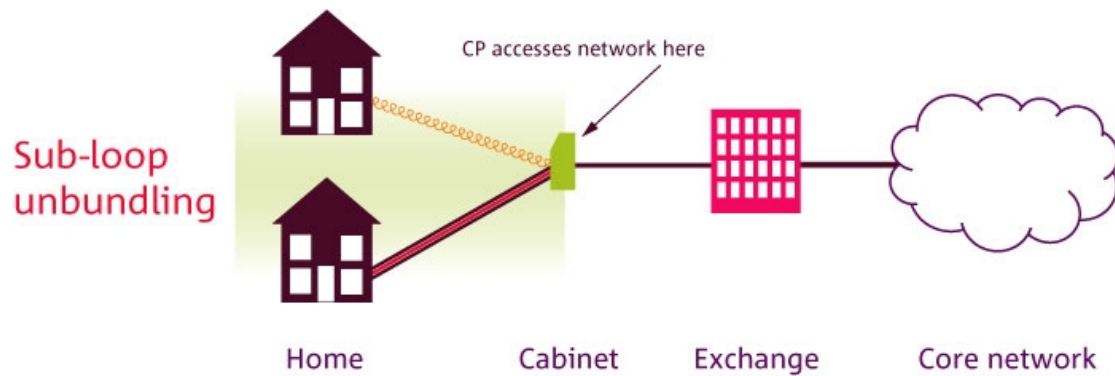
Traffic shaping: When certain types of packets are given priority as they pass through the network. This is the opposite of net neutrality.

Universal Service Obligation (USO): BT, along with KCom in Hull, has a duty to provide a basic telephone and narrowband (or dial up) internet service to everyone in the United Kingdom.

Upstream/downstream competition and products: Describes the relative positions of different players, or their products, in the supply of broadband. The most 'upstream' provider is the one that sells the most basic product (for example copper or fibre access). Players who are 'downstream' of this are those that buy this basic product, add their own elements (for example their own electronic equipment to the end of copper links). These are often called wholesale providers. Further 'downstream' still are players who buy these 'wholesale' products, add their own branding, billing and customer services, and sell them on to customers. In practice, one company may do all three stages above, either explicitly or implicitly (for example Virgin Media or BT).

VDSL (Very high bitrate DSL): An upgrade to ADSL technology which allows for very fast internet access over copper lines. It is likely to be the technology which will be used in FTTC deployments.

WiFi: Short range wireless technologies that allow an over-the-air connection between a wireless device and a base station, or between two wireless devices. WiFi has a range of over 30 metres indoors, and around a kilometre outside.

WiMax (the Worldwide Interoperability for Microwave access): A wireless technology, similar to WiFi, but with a longer range which can cover many kilometres. WiMax has been considered as a wireless alternative for an access technology to provide high speed access links instead of using copper to properties.